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ABSTRACT

Papers presented on social science and map and geography libraries at the 1985 International Federation of Library Associations (IFLA) conference include: (1) "Information for the Developing World: NTIS's (National Technical Information Service) Role in Information Transfer to Developing Countries" (Joseph F. Caponio, United States); (2) "Availability of Social Sciences Information" (Evangeline Mistaras, United States); (3) "Access to Social Science Information Gathered by Government Departments in the United Kingdom" (Derek A. Clarke, United Kingdom); (4) "ERIC: Multidisciplinary/Multinational" (Donald P. Ely, United States); (5) "Nordic Cooperation--from the View of Research and Special Libraries" (Tor W. Holm, Finland); (6) "Online Searching of Social Science Information in WILSONLINE and WILSEARCH" (Wilhelm Bartenbach, United States); (7) "UAP (Universal Availability of Publications) Programme and Informational and Bibliographical Activities of VGBIL (All-Union State Library of Foreign Literature) (Social Sciences)" (A. Kasyanenko, USSR); and (8) "International Bibliographic Standards in Cartographic Archives: The National Map Collection, Public Archives of Canada, Experience" (Hugo L. P. Stibbe, Canada). (THC)

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INFORMATION FOR THE DEVELOPING WORLD:

NTIS'S Role in Information Transfer to Developing Countries

by

Joseph F. CAPONIO
Director
National Technical Information Service
U.S. Department of Commerce
Springfield, VA 22161 (U.S.A.)

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ABSTRACT

Information for the developing world

There is a great need for technical information in developing countries. "Technical information" is broadly defined to include all knowledge relating to how any specific economic activity is carried out. This paper describes how the National Technical Information Service (NTIS) of the U.S. Department of Commerce is helping both individuals and institutions (ranging from small shopkeepers to technical institutes) in developing countries to solve their technical information needs by providing access to NTIS's vast collection of reports and documents. The paper first outlines the need for technical information in developing countries, then describes the techniques and mechanisms being used in the transfer of technical information, and finally, cites the findings of a recent study to illustrate how data from NTIS documents is being applied to address a wide range of technical problems in developing countries. The author concludes that that competent local implementing institutions, such as the libraries and technical information centers which distribute NTIS reports, are vital links in the chain of international information dissemination.

The past decade has witnessed the emergence of information and of information systems as increasingly vital tools for development. The late 1970's and the early 1980's have been dubbed the "information age", and these years are often referred to as the dawning of the "information revolution".

Recent advances in the technology of communications promise to make as great an impact on all of our lives as the Industrial Revolution did more than a century ago. Just as the Industrial Revolution introduced machines into our everyday lives, and thus greatly expanded the physical capacities of humans, so the information revolution will magnify the power of the brain. Unlike the Industrial Revolution, which depended on finite resources such as oil and iron, this new information revolution builds on our existing technological capabilities, but its power is derived from a seemingly limitless resource--the supply of cumulative knowledge and new ideas. Information of all kinds, including technical information, has come to be acknowledged as a valuable resource which can and must be harnessed to address economic and social needs around the world.

"Technical information" is a broad term which needs some elaboration. At the heart of virtually any form of economic activity, from the very simplest to the most sophisticated, lies the technology or knowledge of how the activity is carried out. The term "technical information" includes knowledge about infrastructure and services, agriculture as well as industry; it includes specification of what is produced as well as how it is produced. And the how of production is not merely a matter of technical specifications, but also includes managerial techniques and organizational development.

With many developing countries still standing on the threshold of our new "information age", some of the most important lessons to be learned from the "information revolution" may be for those of us in the business of promoting development. Technical information and information services have a fundamental role to play in both regional and country development programs. The solutions to many difficult, but important technical problems have already been found by someone else. The ability to access existing information enables us to make use of these solutions at a relatively low cost: it provides a way to solve problems without continually having to re-invent the wheel.

Access to and possession of technical information enhances the effectiveness of the expert, and can greatly increase the effectiveness of the individual with less than "expert" level of training. Individuals and institutions involved in a wide range of economic activities in developing countries have specific technical information needs: needs for which either partial or total solutions already exist. One of the major stumbling blocks we are facing at the present time is how to get the potential end-user of technical information in touch with the specific piece or pieces of information which can help to solve the problem at hand.

For example, imagine you are the owner of a sugar farm in Jamaica who can no longer make a living because of the declining world market price of sugar. You are in need of information which will help you to reach a decision as to alternative agricultural products suitable for your land. The local agencies you have contacted (and you have contacted them all) have not been able to provide much useful assistance. Where can you go to obtain the kind of information you need?

Or, consider the case of an industrial enterprise in Colombia which was polluting the local water supply as the result of the direct discharge of industrial solvents. The managers of the plant desparately wanted to improve this situation, but did not know where to go to find the technical information they needed. They eventually located just the information they needed: it enabled them to build a system of tanks which not only cleaned up the water, but served to recapture the polluting solvents for re-use in the industrial process. Where did they find this type of information?

For those living and working in developing countries and in need of specific pieces of technical information as just described, a competent local implementing institution to guide and monitor the flow of technical information is essential. Without such a link between the technical information source and the individual and/or institution in need of information, an efficient and meaningful transfer of knowledge is not likely to take place.

The National Technical Information Service (NTIS), an agency of the U.S. Department of Commerce, is currently playing a dynamic role in establishing viable systems of worldwide information dissemination. NTIS is working hard to establish mechanisms of assisting the individual or institutional end-user to identify and focus on a specific information need. These same mechanisms will enable both individuals and institutions to uncover successful solutions to their particular problems by providing access to the vast collection of scientific and technical information available through NTIS upon request.

NTIS was originally established by President Truman after World War II in order to make the results of government research conducted during the war available to U.S. industry. NTIS has since grown to become the central permanent source for the collection and dissemination of specialized business, economic, and technical information originated by U.S. Government agencies, with well over a million documents on file. Among this total, 300,000 reports come from foreign government and privately sponsored research.

About ten years ago, the Agency for International Development realized that much of this information would be of great use to developing countries. As a result, a decision was made to sponsor several key international activities at NTIS. The goals of these activities were twofold: first, to design and install mechanisms to "spread the word" that NTIS information was available; and second, to help to establish a system of fulfilling the resulting requests for technical information assistance. Some of the techniques and mechanisms which have been employed in technical information delivery systems to date include the following: financing core personnel at NTIS, funding airmail subsidies, encouraging the automation of services, funding special marketing and promotion activities, creating appropriate technology publications, and providing staff training sessions. Most recently, energies have been focused on efforts to strengthen the institutional capabilities of the local NTIS distributors in Latin America and the Caribbean as well as the Near East.

Particular attention has been paid to the identification and establishment of technical information centers and/or libraries which serve as distribution outlets for NTIS documents, and therefore, as a primary mechanism for information transfer. Known to NTIS as cooperating agencies, those libraries and/or technical information centers range from university-affiliated libraries to small, independent distributorships of NTIS and other technical documents, to sophisticated technical institutes.

NTIS has long recognized the importance of the role played by these institutions within the international information dissemination network. They provide a direct link between end-users of technical information and NTIS, and often serve to introduce the users to the wide range of NTIS products and services. The cooperating agencies enable NTIS to improve its service through an expansion of the resource base from which technical information is drawn. This is done by soliciting the cooperation of user institutions and documentation centers in contributing reports to the NTIS collection. In both 1983 and 1984 more than 500 reports were contributed to NTIS from developing country sources.

NTIS technical reports pose special challenges for libraries, and especially so in developing countries. NTIS report literature is of greatest value to researchers and practitioners currently engaged in a project, where news of a recent development may spur their progress. However, report titles are so very specific, that it is difficult for a library acquisitions program to select popular titles in advance, unless the library has already decided to offer all the reports of a given organization, such as the Environmental Protection Agency, the Department of Energy, or NASA.

Libraries with limited outreach, those which archive materials for a specific audience, find it most useful to provide access to the NTIS bi-weekly announcement journal, Government Reports Announcements and Index (GRA&I), or an Abstract Newsletter appropriate to the library's special area of interest. In developing countries NTIS offers a free monthly announcement journal called ALERTEC (formerly AMTID) in Spanish and English. This journal is designed for direct mailing to the end-user, and it can be attached to an SDI profile already provided by the library.

NTIS is working hard to help these libraries become more efficient and more successful in their efforts to disseminate technical information. As the result of their ongoing communications with NTIS, these libraries are able to identify particular areas of information needs as the needs become apparent.

In the past few years, NTIS has been working directly with the personnel of many of the cooperating agencies, training them in outreach techniques, in monitoring and evaluation methods, and developing internal management information systems. These are all important components in the development of effective mechanisms for the transfer of technical information. Technical information, in the form of a document or a report, sitting in a warehouse doesn't help anyone until it becomes accessible. And, in turn, if NTIS doesn't receive feedback concerning what type of information is in demand, we won't know what kinds of information we may need to make a special effort to acquire. This is one of the primary concerns of NTIS: to establish and install a viable system of information exchange in the developing world, and to be confident that the range of information in the NTIS collection is indeed useful, relevant and responsive to the needs of individuals and institutions in developing countries.

NTIS is currently experimenting with a variety of strategies which cooperating agencies might use in order to expand the market for technical information. Mailings, promotional activities, conferences, user seminars, and industrial visits are among the ways which are being tried in the effort to alert larger numbers of potential end-users to the existence of mechanisms for obtaining the technical information they need. Although additional work still needs to be done to demonstrate to potential end-users that information exists which is capable of providing solutions to their specific technical information needs, it is now clear that our efforts have been worthwhile.

Recent studies have shown conclusively that the ability to access the NTIS collection of technical information makes a difference, and, specifically, that the ability to obtain technical information through an institutionalized mechanism, such as a technical library or a cooperating agency can make a big difference.

One such study (1), conducted in 1982, which examined the NTIS distribution network in five countries in Latin America concluded that NTIS information, when accessed, made a significant contribution towards technological change. The study interviewed end-users of NTIS technical information in Mexico, Costa Rica, Colombia, Peru and the Dominican Republic, with the aim of determining whether in fact the recipients of the information were utilizing it, and if so, in what capacity? The study also examined what impact, if any, this was having on the accumulation of technological capability and thus, on the development process itself.

The specific ends to which the users could apply the information accessed through NTIS were broken down into seven major categories, three of which were considered primarily referential uses of the information, and four of which were considered to be applicative uses. These applicative uses were as follows: transferral of information through courses, papers, reports or speeches; utilization of the information to determine national or technological policies or standards; assimilation and transformation of the information in applied research; and hands-on application of the information in an economic activity such as manufacturing, construction, engineering or food processing.

The information gathered through personal interviews in the study revealed that 81% of all end-users fell into the applicative category. Of even greater significance was the fact that more than half of all users were utilizing the information either in applied research or operational, hands on applications. The application profiles which emerged from this study indicated a strong trend towards adaptive transfers of technology and underscored an ability to make technological choices, to adapt and improve upon chosen techniques and products, and to generate new technologies, all essential aspects of the development process.

The major conclusion which can be drawn from the exceptionally high utilization rate is that NTIS is not only a very important source of information for the transfer of technology in the region, but that the uses to which the information is put, and the frequency with which it is applied, demonstrate its significant actual and potential contribution towards technological capacity building, and therefore, towards development in Latin America. This conclusion was supported by the views expressed by end users, who placed a high value on the availability of the information, as well as on the expansive, in depth coverage of the information, and the breadth and scope of information that can be accessed. The overwhelming majority of respondents (96%) felt that the information had expanded their knowledge, and nearly three fourths (74%) felt that the documents had covered the range of information requested and the type of resources needed. Two-thirds (65%) felt that their specific need had been filled as the result of the information they received from NTIS. Another significant finding which was uncovered by this utilization study was that the potential for further applications of the NTIS information was open-ended: 66% of those interviewed stated that the materials received were read not only by them, but by others in their organization, and 65% indicated that the information had been deposited in a central file or library where a greater number of people would have access to them.

The Jamaican sugar farmer, referred to earlier, utilized the information he received from NTIS to successfully convert his land to growing black pepper, a spice which had previously been imported by Jamaica.

A non-profit institute of cement producers in Colombia wanted to design low-cost housing that would survive periodic river floodings. Using an NTIS document, they were able to build a prototype floating house out of ferrocement. The house can be built by unskilled labor, it requires only indigenous materials, is cool in the summer while retaining heat in the winter, and is virtually maintenance free.

A firm in Mexico needed information on how to design solar collectors for use in rural areas. As the result of NTIS information, the entire village of Ajusco in the state of Mexico is now cooking its meals, heating its water and its homes with solar energy.

A company in Peru used an NTIS report to set up a research station for the cultivation of crawfish.

These are only a few examples of instances in which information initially generated at great expense, was purchased from NTIS for just the cost of reproduction and delivery, and put to good use increasing productivity. Countless other cases exist. The range of applications of NTIS technical information is broad and clearly indicates a strong trend towards adaptive transfers of technology. A large number of the applications offer clear evidence of a preoccupation with conditions of scarcity relating to the allocation of natural and energy resources. This is clearly shown by the increasing numbers of requests for information on alternative energy technologies (solar and wind). A similar concern is demonstrated by the numbers of requests for information which will aid in the development of underexploited food sources (fisheries and hatcheries) and in expanding food production capabilities. A preoccupation with the need to develop experimental types of infrastructure is also clear: the emphasis is on the use of natural building materials (bamboo, soil, cement, ashes) for prefabricated housing units and other construction, pointing towards the generation of new endogenous technologies. Also in evidence is a strong concern with environmental control issues especially as they pertain to water pollution control in industrial applications and watershed management.

The accumulation of technological capability is at least as important to economic development as is the accumulation of capital, and this capability is critically dependent on the ability to access scientific and technical information. All of the evidence available to date suggests that information services, international institutions and local implementing agencies have significant roles to play in the transfer of technology to the developing world, by providing assistance in the collection and dissemination of technical information.

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Availability of Social Sciences Information

by

Evangeline Mistaras
Head Reference Librarian & Social Sciences
Bibliographer
Northeastern Illinois University
Chicago, Illinois United States

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Availability of Social Sciences Information

There has been a real revolution in the provision of library services in the last ten years. Traditional means of service have been augmented by networking, the introduction of computers, and online bibliographic services. How librarians have adapted to these new developments and used them to augment and to expand traditional services serves as the theme of this paper.

In presenting this paper on the availability of Social Science information, I would like to draw upon my own experiences as a reference librarian and Social Sciences bibliographer at Northeastern Illinois University. I do not think our responses to the changes of the past ten or fifteen years are unlike those of other libraries. Located on the northwest side of Chicago, Northeastern was founded in 1961. It made the transition from teacher's college to liberal arts institution and subsequently became a university in 1966. Our library serves a student body of 10,000 students. We grant Bachelor's and Master's degrees in traditional subject areas and strongly emphasize programs which prepare teachers. Our library would be considered small to medium sized. There are 500,000+ volumes in our collection. We are located in what might be called a "library rich" city and state and can provide numerous materials for our patrons from a rich network of sources. The Chicago area has magnificent library resources, such as the scholarly collections at the University of Chicago and Northwestern

University, great research collections at the Center for Research Libraries and Newberry Library, a large number of medium sized academic libraries, the public library of the City of Chicago, a strong network of suburban library systems, and numerous special libraries.

Since we are a relatively new institution, without the financial resources, space, or staff to develop a "research" library, we stress access to the large multiplicity of Social Sciences materials that is available to us on the local, state, and national levels. Consequently, we place heavy emphasis on the provision of as many access tools as possible to bibliographic and serial literature, the sources, repositories, archives, documents, films, tapes, and so on. We have gone beyond the provision of such standard tools as *Sources of Information in the Social Sciences* by Carl M. White (Chicago 1985), *Social Science Research Handbook* by Raymond G. McInnis (New York 1975), or *Harvard Guide to American History*, titles well known to any reference librarian, to the provision of special finding tools and catalogs. We provide a wide range of bibliographies, indexes, abstracts, and source books which enable us to find even the most obscure references. The *National Union Catalog* (NUC), *Mansell*, the *British Library Catalog*, and various book catalogs augment our public card catalog. Large abstracting services such as *Psychological Abstracts* and *Sociological Abstracts* are augmented by a multiplicity of subject abstracts. The Wilson indexes, used by even the smallest public academic library, are strengthened by such special items as *Human Resources Abstracts*. We make provision for the needs of the freshman who needs material on a current topic easily obtained in *Editorial Research Reports* as well as the requirements of a graduate student who is looking for material on the Creoles and their socioeconomic status. The periodical literature of the various disciplines, such as the *American Anthropologist*, the *American Historical Review*, the *American Political Science Review*, *Foreign Affairs*, and the *American Sociological Review* are checked for serious comments on the literature in the subject area and in order to keep current with trends and developments in specific disciplines. To direct users to information which is ephemeral or difficult to locate, we maintain clipping files.

Five years ago we began data base searching. When abstracting and indexing services went "online", it became possible to provide bibliographies and data from many of the tools available to us on paper, as well as from those bases that are solely online. Such searching is expensive, and we have yet to solve the problem of free access to this powerful new reference tool. We have sources that allow us to locate the existing materials: placing the physical citation, the actual text, into the patron's hand is another matter.

Micrographic reproduction of historical sources has enabled us to obtain sources and data previously held only by libraries old enough to have acquired the originals. We have acquired runs of serials of vital importance in the development of the Social Sciences, and we have purchased reprints of basic titles. Augmenting our collection with these reprints has enabled us to acquire the patina of age. However, we still lack the funds to buy all of today's materials as well as to build a repository of the past.

As a separate institution we are not capable of supplying all the needs of our faculty and students, and I would venture to say that today, no library, no matter how large, is able to provide this service. Cooperation is the answer to assistance in depth for the scholar.

Locally we rely on the collections available to us in public, academic and special libraries. Specifically, heavy use is made of an unique resource available to American libraries, namely the depository collections of United States government documents. These collections of documents held in depository libraries, classified in a separate scheme designed uniquely for government documents, contain a storehouse of information in history, politics, sociology, economics, and American culture. These records are available to all citizens of the United States and the phrase, "documents to the people", the slogan of the Superintendent of Documents, is taken seriously. Depository collections must be available to the public, even in the most exclusive academic library. The system of depository collections, the expansion of document book stores, and the historical low cost of government publications make it possible for almost all libraries to acquire authoritative materials at a low cost.

Northeastern became a depository library for United States and Illinois government publications in the middle 1960's. Although we have a wide-ranging collection, we rely on the historical materials of the Chicago Public Library, the University of Illinois at Chicago, and the Illinois State Library to supplement our holdings, and we make arrangements for our students to use the large collections of domestic and foreign documents located at Northwestern and the University of Chicago.

Government publications received a new impetus for increased use when the Congressional Information Service published access tools to what was formerly a poorly documented bibliographic record. Their unique indexing and abstracting style led to a wide use of government records and data. The Congressional Information Service (CIS), which indexes publications from the United States Congress, the American Statistics Index, a standard source of government statistics for the United States, the Statistical Reference Index (SRI), a statistical service for private and state publications, and the Index to International Statistics (IIS), have revolutionized access to statistical data. Microfiche for all of the sources cited is available. It should be noted that these titles are only a selection of the creative titles CIS has produced.

As I have already indicated, we have available to us in Chicago the resources of two unique libraries, namely the Newberry Library and the Center for Research Libraries. Newberry gave to Northeastern a huge collection of duplicate United States documents. This forms the basis of our own documents collection in humanities and social sciences. The Center for Research Libraries, which began as a repository for seldom used materials of ten large midwestern universities, is now a vast repository of original and reprinted source materials. Its collection is available on loan to members throughout the United States. As associate members we are able to borrow from the Center, and thus have available for our patrons, collections worth hundreds of thousands of dollars. For example, we have borrowed from them British parliamentary papers, Spanish Anarchist newspapers, women's Victorian periodicals, and foreign dissertations.

The development of the Infopass system and the publication of

Libraries and Information Centers in the Chicago Metropolitan Area made it possible to send our users with proper indentification to libraries such as the Newberry, the Cook County Law Library which provides nonlawyers the services of a specialized legal collection, and to the collection of a small suburban public library which has special materials on local history. This Infopass literally opened the doors of hundreds of libraries that had never served an outside clientele. In Chicago an information consortium of seven academic libraries, called CALC, makes it possible for students of member schools to borrow from all of the libraries with only a valid student indentification card.

In Illinois we have ILLINET, a statewide interlibrary loan system. It is designed to supplement and to enhance traditional interlibrary loan services, and it has integrated the academic libraries within the public library system, giving residents of these areas access to their collections. Four libraries, libraries of last resort, such as the University of Chicago, supply titles not obtainable elsewhere from their collections. Protocols which limited interlibrary loan service only to faculty and graduate students disappeared. The traditional paper system of securing interlibrary loan materials presents many problems. A tedious verification process, the natural reluctance of the large libraries in NUC to supply scarce and expensive materials, delays caused by the postal system in all phases of the process, as well as the protocols limiting interlibrary loan to faculty and graduate students are the bottlenecks.

Online searching has been called a revolution. Taken in perspective, it is nothing more than an enhanced bibliographic index. The true revolution began quietly enough when OCLC was introduced;--At first, the system was used to catalog materials online. What was little noted and stressed less was the fact that quite literally the walls of our individual libraries were blown away. The result of OCLC is a true national union catalog, for we now have access to the collections of any participating library. Willing or not, we are now members of a national library system. There is a true national union catalog, and its contents are available to the users of almost every library in the United States. It is difficult for some of us to consider lending "our" materials to any point in the United States; our books, our films, our maps, our records, our tapes, our cassettes, our scores, our manuscripts. Nevertheless, our holdings are now part of the OCLC data base. This online catalog makes available much more than the traditional sources included in standard bibliographies. In addition to monographs and serials, there are maps, newspapers, charts, statistical packages, films, tapes, cassettes, and manuscripts. The student who wants to read about the Russian Revolution can now borrow a tape of Lenin's speeches.

OCLC has facilitated reference services, and its impact as a selection tool is such, that it enables individual libraries to check holdings in their state or region in order to determine whether specific items need or need not be duplicated. We now have an unparalleled reference tool literally at our fingertips. Using a standard typewriter keyboard, we can determine publishing data, holding information, addresses, biographical information, and other authoritative records. No longer need we spend hours to determine whether an item indeed has been published. Via the information available on OCLC, the verification

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for interlibrary loan requests is made more simple and accurate. In addition bibliographies of authors' works can be printed for a patron, and the print-out will include not only what has been published in monographic format but will also indicate manuscripts, recordings, cassettes, films, and translations. The name/authorities file, which also serves as a see and see also file, enables us to verify the names of authors, titles, organizations, and geographical locations. Now we can also trace the successive names of an organization or place. This can be printed for the patron who now can use the information to locate established headings and references in the card catalog. In addition, this history of successive naming can be used as a finding tool in various sources, such as indexes, abstracts, or bibliographies in which research is being conducted. For example, the name of a political party in 1900 may have been different from today, and the printout will indicate this.

A further enhancement to the location of serials is the availability of sixty-four online union catalogs. Although the typical OCLC record can supply holdings information for a specific title, it does not tell us the details of a specific run in a particular library. The serials online union catalogs do this. Thus we can find out that the Center for Research Libraries has volume 2, no. 6 of a specific journal.

The Name-Address subsystem of OCLC has, in effect, created a huge directory of directories online. Many of us know what it is to look for the address of an organization or publisher. Hours, indeed, days can be spent in trying to find this information. With a simple command, the Name-Address file supplies the address and/or telephone number of any library, organization, publisher, or governmental agency which has anything to do with publishing. For libraries in the Name-Address directory there is information on interlibrary loan policies and in many instances information on special collections and materials.

Finally, the transmission of interlibrary loan requests online lessens the pressures brought upon the large university and research libraries. Now we, the smaller library, can accomodate a Chicago, or Stanford, or Berkeley for a certain item. We call up a work form online in five libraries on a string, and the request goes from one library to the next within four days.

In Illinois we have a circulation system referred to as LCS. Under the direction of the University of Illinois at Urbana, the state of Illinois has developed a circulation system which was expanded to include the holdings of twenty-five academic libraries. Access is by author, title, author/title, or call number. The holdings of the individual libraries are checked first. It is possible to see if an item is in the collection, what is its status, reference or not, if it is in circulation, or on the shelf. If the item is unavailable in our library, it is then possible to check the holdings of each of the other member libraries. With a valid identification card we can charge the item at another library to our user from a terminal in our Circulation Department. A state-wide delivery system will supply materials within a week or ten days. Returns can be made to either the lending or borrowing library. With the exception of Northwestern University and the University of Chicago, our students and faculty can borrow materials from the collections of many academic libraries in the state of Illinois.

Our experiences at Northeastern are not too different from those of other libraries. There is available in the United States a rich collection of sources in the Social Sciences: book collections, libraries, serials, monographs, data banks, archives, statistics, archival and manuscript collections which are accessible through the traditional finding tools. Before the advent of the new technology, access to these rich sources was available only through standard sources in print. Off-print publishing, microfiche and film helped to gain access to items and collections previously unavailable. Special Collections and access to them via consortia or networks have been, and still are, useful. On-line data base searching has expanded the range of materials available to the user. This has compounded, not solved, the problem of delivery to the user. The development of OCLC and LCS in Illinois has had the effect of opening up the collections of all participating libraries to users. For those practitioners in the Social Sciences, this has been of undoubted benefit. There are a multitude of libraries and institutions rich in the resources and data of the Social Sciences. It is possible to identify these resources and, through the good will of co-operating libraries, deliver resources to the user. I hope this short survey of "how we do it at our place" has enabled you to understand how one fairly typical library has responded to the challenges of new systems and new technologies. We are now entering into another phase of this new technology. We have in the PC, the personal computer and its programs, a challenge to augment and to expand our activities.

Absorbing these changes, building and expanding traditional services, and extending new and enhanced services to our users is exciting. We, in the United States, have a strong base of services and resources available in the Social Sciences. It is exciting to be here at a time when these resources are being "opened up" to all who need to use them.

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Access to Social Science Information gathered by Government Departments in the United Kingdom

by

Derek A. CLARKE

Ottery St Mary
U. K.

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Derek A. Clarke
(U.K.)

ABSTRACT

The paper gives illustrations of the wide range of information collected by government departments which may be of interest to social science researchers and is potentially available to them. It gives an account of guides to this material which have already been published, and proposes an updating and extension of these. It describes the processes by which the material is preserved, "weeded" and made available, and the factors promoting or limiting this availability. The recommendations of the Committee on Modern Public Records in this area are reviewed. Some aspects of the impact of automated data processing on the availability of government information are considered.

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Access to Social Science Information gathered by Government Departments in the United Kingdom

D. A. CLARKE

Both for the purposes of day-to-day administration and for the formulation of future policy, government departments gather information on a wide range of topics, including much that is potentially valuable for social science research. ("Social science" is here interpreted very broadly, to include economics and government as well as social studies in the more restricted sense of the words; and "information" is also used in a broad sense, to include not merely statistical and other factual data but the whole range of official documents and records.) A few random examples are agricultural economics and farm profits; consumption of food and drink;public service pay and personnel management; social planning; regional and town planning; population trends; the supply and training of teachers; employment statistics; labour mobility; industrial relations; immigration and race relations; safety, health and welfare;manpower planning; local government reorganization; housing; the health services; smoking; prisons and penal policy; the police. The records of some quasi-official bodies, e.g. the research councils and the nationalized industries, must similarly contain information of major value for research. Though some types of material clearly need to remain closed for a considerable period (e.g. census material and other records of individuals, and data supplied in confidence by business), most of it is not inherently confidential and could be produced to *bona fide* researchers long before the expiry of the statutory period of 30 years after which government records normally become accessible in the Public Record Office (PRO) in accordance with the Public Records Act, 1967. The problem for the researcher is first to discover what information exists and then to obtain access to it.

In the 1940's and early 1950's the Inter-Departmental Committee on Social and Economic Research (the North Committee) put in hand substantial listings of government material of social science interest (including some unpublished material) held by various departments, which resulted in the publication between 1950 and 1961 of a valuable series of six "Guides to Official Sources". The Social Science Research Council, soon after it came into being in 1965, set up a Social Science and Government Committee, which served in a sense as a successor to the North Committee. This soon recommended that the North Committee initiative should be repeated on a wider scale and the guides brought up to date. The Council therefore awarded a contract to the British Library of Political and Economic Science (at the London School of Economics) to produce a new, single guide to all the unpublished government data likely to be of interest to research workers in the social sciences, and potentially accessible to them, that a small team could locate and list in a limited period. The resulting "Guide

"Guide to Government Data", published in 1974(1), reported the material revealed by surveys of 17 departments, carried out over a period of three years from September 1969. It is clearly of the greatest importance that these listings should now be updated, and the remaining departments covered.

Although sheer lack of time necessitated the exclusion of some departments from this survey, the absence on other grounds of certain important departments is greatly to be regretted; and it is important that their records should now be surveyed. In particular, the Department of Trade and Industry did not find it possible to participate in the enterprise; and, though a great deal of material is published by that department, a guide to unpublished material there remains a most important need for economists. The Foreign and Commonwealth Office was excluded in view of the confidentiality of much of its unpublished material and the practical difficulties of sorting it: those researching in contemporary history will nonetheless find it particularly unfortunate that such materials as press releases could not readily be assembled and made available to serious scholars. The records of the former Department of Scientific and Industrial Research must contain a vast fund of valuable data relevant to the social sciences in many fields; but preliminary approaches made it clear that a worthwhile survey was impracticable at that time.

Though considerations of personal privacy and commercial confidentiality will probably always prevent access to recent unpublished data in the Office of Population Surveys and in H.M. Customs and Excise, the remaining departments should now be included in a new survey. It seems very possible that in some cases the decision that a particular department could not cooperate in the earlier survey may have been affected by traditional departmental, or even by personal, attitudes towards public aceess to official documents as such; or by the accident that its library was particularly hard-pressed at the time of the enquiry: in these cases a renewed approach might now be favourably received, enabling a proper survey to be carried out. It may also be hoped that the official attitude towards public access is becoming more liberal; and that the policy expressed at the time of the former enquiry by the Civil Service Department, namely that it should "make available as much of the material as it reasonably can within the official limits most generously interpreted", is more widely accepted. There are at least some signs of progress in this direction. In 1970 guidelines(2) were published which clarified access to departmental documents by research workers; though little, if any, advantage appears to have been taken of them. Subsequently, in July 1977, the Civil Service Department sent a letter (the "Croham directive") to heads of departments on the disclosure of official information. This said that "In the past it has normally been assumed that background material relating to policy studies and reports would not be published unless the responsible Minister decided otherwise. Henceforth the working assumption should be that such material will be published unless they decide it should not be."(3) Since then certain factual and analytical material used as a background to major decisions has become more widely available.

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Such an improvement in official attitudes should make it easier to find funds for and to carry into execution the compilation of a third Guide,which would not only update the surveys already published but also guide scholars to the important sources of unpublished information held by departments not hitherto surveyed.

For access to material restricted by the 30-year rule the researcher is normally dependent on the libraries of departments. The amount, type and quality of unpublished material actually made available to a researcher in a library varies considerably from department to department, according to the extent to which it is departmental policy to transfer papers from administrative divisions or branches to its central library. In turn the libraries have varying policies on the admission of researchers; on the extent to which readers, once admitted, are given access to papers; and on publication - some departments publish a substantial proportion of the material available.

It may be useful to explain that working papers in a government department are usually held in individual registries attached to the separate divisions or branches which they serve. Although files are reviewed by the department after five years in order to arrange for the destruction of ephemeral material, files containing correspondence and minutes are retained by the department and are not accessible to the public as of right until they are transferred to the PRO after 30 years; and some may be retained by the department after that date on administrative grounds. So if certain information, although not"classified" in the official sense of security classification, is neither readily available in a departmental library open to the public, nor published, nor (as is usual in the case of statistics) provided on payment of a fee to the statistical department concerned, then it generally seems unlikely that under present arrangements members of the public will be able to consult the relevant papers until they have been transferred to the PRO.

The documents which thus eventually become accessible in the PRO are, of course, conventional paper records. It is clear, however, that a substantial proportion of the statistical and other factual data gathered by government departments are now being, or could be, recorded by automated data processing methods; and in 1981 the Committee on Modern Public Records (the Wilson Committee) recommended that "the nucleus of a data archiving centre" should be established as soon as possible; and the Government agreed that a feasibility study should be carried out for the establishment of such a centre at the PRO. Unhappily it is now clear that the establishment of the proposed centre is still quite distant. It is to be hoped that, when it is finally set up, the centre will work in close cooperation with such other centres as the Social Science Data Bank of the Economic and Social Science Research Council.

The advent of data processing techniques should also enable
/scholars

scholars to exploit the records more fully through the adoption of machine indexing. The current "state of the art" in applying ADP methods to extensive collections of records and the scope for further development will no doubt have been discussed in last week's international seminar on "The Social Sciences and Electronic Technology in the Area of Government Information". Electronic technology should also assist with the hitherto intractable problem of "particular instance papers" (PIP's). These consist of groups of papers, often very numerous indeed, the subject of which is the same in all cases, though each individual paper relates to a different individual, body or place. While each individual paper may in isolation be of little importance, when a set of PIP's is taken as a whole and analysed it may form a source from which conclusions as to historical, economic or social trends may be drawn.

In 1979 the appointment of a committee of inquiry into the working of the Public Records Acts (the Wilson Committee)(4) gave interested parties an opportunity to propose changes which would facilitate the use of government records by researchers in the social sciences. Some such opportunities which were taken in the Committee's report and in its subsequent consideration by the Government, and others that were missed, are set out below.

In view of the potential importance of information contained in the records of such bodies as the research councils and the nationalized industries, it was recommended that the PRO should make proposals for consistent arrangements for the selection, preservation and public inspection of the records of the research councils and nationalized industries.

Serious concern had been expressed to the Committee about the "weeding" of records (i.e. the selection of those papers which are considered tojustify permanent preservation, and the removal of the remainder) before they are transferred to the PRO. It was felt that coherent, clearly applicable objectives should be established; and that those carrying out the task of "weeding" needed to have an appreciation of the needs of present and future scholars. It was also suggested that some types of material removed at this stage might be transferred for preservation outside government departments (e.g. to universities); and that special note should be taken of the importance for research of the working papers of Royal Commissions and Select Committees and the evidence presented to them. In the light of this the Committee recommended the adoption of a system of "sector panels", including both departmental interests and researchers with experience of the field in question, to advise departments on the official and the wider purposes to which departmental records might be put, so that this advice might be taken into account by the "weeders"; but the Government has rejected this recommendation. In the event, the Committee made no reference to the

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suggestion that some "weeded" material might be preserved outside the relevant department: there was perhaps the thought that the organization and scholarly exploitation of such deposits might require rather substantial expenditures by the recipient organizations.

The report of the Committee made no reference to the suggestion that the press releases issued by Government departments should be preserved; or to the proposal that the indexes to unpublished papers held in the PRO should be computerized; or to the concern that has been expressed over the rigid application of the 30-year rule when material on the same topic is already accessible outside the PRO, and when material of a routine nature, but nonetheless of some historical interest, is closed by an automatic application of the rule.

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4. Report published as Modern Political Records; selection and access. 1981. (Cmnd.8204) This was followed by Modern Political Records; the Government response to the Report of the Wilson Committee. 1982. (Cmnd. 8531)

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ERIC: Multidisciplinary/Multinational

by

Donald P. Ely
Director ERIC Clearinghouse on Information Resources
Syracuse University
Syracuse, NY, USA

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Abstract

The Educational Resources Information Center (ERIC) serves as a major social science database in the United States. Its basic design has remained constant for almost 20 years with improvements and enhancements added from time to time. By the end of 1984, there were 545,359 items in the database made up of documents and journal articles. This paper describes the criteria for multidisciplinary databases as they are reflected in the ERIC system. It presents factual information about the multinational dimensions of the system: extent of non-U.S. documents, magnitude of non-English documents, number of international journals indexed, and inclusion of information from international organizations. The conclusion points out the extent to which ERIC makes its information universally available.

ERIC (Educational Resources Information Center): Multidisciplinary/Multinational

Donald P. Ely, Director, ERIC Clearinghouse on Information Resources and Professor of Education, Syracuse University, Syracuse, NY, U.S.A.

When the results of a 1983 survey of online computer searching in the United States were announced, ERIC (the Educational Resources Information Center) was named as the most frequently used database in the social sciences with three times as much use as the second most used social science database (1). The same study revealed that ERIC is the second most frequently searched database according to the records of two of the most widely used database services in the United States. Another study (2) discovered 3,269 ERIC access points in the United States which are used more than 2.7 million times annually. The extent of ERIC use in other parts of the world is unknown but it is available and actively used in more than 50 countries. The purpose of this paper is to: (1) provide some background data about ERIC and its current status; (2) describe its multidisciplinary character; and (3) present its multinational dimensions.

Brief History and Current Status

When the ERIC system was being planned in the early 1960s, its major purpose was to capture the fugitive literature of Education, much of which was being created in the form of research and project reports funded by the U.S. Office of Education (currently the U.S. Department of Education). The designers envisioned a system which would identify, select, abstract, index, and make available the literature which does not find its way into the mainstream of published literature such as conference papers, reports, research reports, speeches, statistical data, tests and other epheremal documents. This literature, along with other new types of documents (such as instructional materials for practitioners) continues to be the mainstay of the ERIC database. The original designation of ERIC was Educational Research Information Center and was changed in 1967 to Educational Resources Information Center to reflect its wider scope and expanded audience of potential users. (3)

From its official beginning in 1966 until the end of 1984, ERIC has created a database of 240,323 document abstracts and, with the addition of journal indexing which began in 1969, has added 305,036 citations from the periodical literature for a total of 545,359 items in the database at the end of 1984. (4) Ninety-five percent of the documents are available in their entirity on microfiche and about 75% of the individually indexed articles are available in reprint form if they cannot be located in a library. By any measure, this is an impressive information system. It is all the more impressive when one considers that it was designed about twenty years ago and still maintains its basic organization and operating structure.

ERIC is a decentralized network of 16 clearinghouses, each collecting and processing information on particular areas and aspects of education. Following standard processing rules, each clearinghouse sends properly coded document data and abstracts to the central ERIC Facility which, in turn, creates a tape from which the monthly abstract journal, _Resources in Education_ (RIE) is printed. A second tape is created by the ERIC Facility from items indexed from the periodical literature. This tape is used to print the _Current Index to Journals in Education_ (CIJE) and is later merged with the RIE tape to serve as an online database. Individual organizations, such as universities and database vendors mount the tape for their online users. Thus, individuals have initial access to ERIC through the monthly abstract journals, RIE and CIJE, and online through local or remote database services.

Full text document backup is available through low cost microfiche. Less than 5% of the documents are available through other sources. All documents which are available in microfiche are in the public domain or have been given releases by authors or institutions which have published them. As for journal articles, they are often found on the shelves of libraries but, if they are not, most of them can be ordered from a commercial source.

The ERIC system has maintained this basic structure for its entire lifetime. It has been enhanced by new data elements such as "target audience," "geographic origin," and "language" to facilitate precision in online searching. New publication types have been added such as, "multilingual/bilingual materials" and "computer programs." There is an ongoing vocabulary review process with new descriptors being added and obsolete ones removed. Scope notes have been updated and tightened. The Eleventh Edition of the _Thesaurus of ERIC Descriptors_ will be published in 1986. It contains additions, changes, and deletions since the Tenth Edition was published in 1984. The design of the ERIC system is considered to be sufficiently robust that it has served as the basis for other databases in other parts of the world since its inception. (e.g.,the European Documentation and Information System for Education, the Ontario Educational Research Information System, and the Australian Education Index Data Base.

ERIC has led the way in the design and application of user-oriented databases in the social sciences. It has stood the test of time in a technical sense by continuing its basic configuration and improving and refining its operation. It was originally planned to be an information system for educational research in the United States but has expanded to be a comprehensive source of educational information worldwide. Its multidisciplinary and multinational characterictics are sometimes not known nor are they fully understood. The next sections of this paper turn to these aspects of ERIC.

The Multidisciplinary Nature of ERIC

Access to information in the field of Education was the original goal established by the designers of the ERIC system. That goal is still the primary focus, however, over the years, Education as a social science has been broadly interpreted. Education is the common thread which runs through ERIC but the fact that each of the subject matter based clearinghouses specializes in one or more disciplines related to Education gives ERIC a multidisciplinary character which has emerged as an excellent example of a database in the applied social sciences. For example, there are clearinghouses devoted to most of the mainline disciplines: Languages and Linguistics, Reading and Communication Skills, Science, Mathematics, and Environmental Education, and Social Studies/Social Science. Other clearinghouses are more specialized in the practice of educational organizations, e.g., Adult, Career and Vocational Education, Counseling and Personnel Services, Educational Administration, Elementary and Early Childhood Education, Handicapped and Gifted Children, Higher Education, Information Resources, Junior Colleges, Rural Education and Small Schools, Teacher Education, Tests, Measurement, and Evaluation and Urban Education. (See Fig. 1) Each of the profession-related clearinghouses has its roots in one of the basic disciplines such as psychology, sociology, or management science. There are several factors which contribute to the smoothe working of this multidisciplinary effort.

Criteria for Multidisciplinary Databases For a multidisciplinary database to effectively and efficiently serve the designated users, certain criteria seem to be necessary:

1. Competent content specialists from each discipline represented in the database must be in decision-making positions. Ultimately, the integrity of the database will be tested by scholars and researchers in the fields represented. To locate useful information, appropriate vocabulary must be used. A user expects to find information relevant to the topic being searched. Decisions regarding what to include as well as the descriptors used to describe it and to locate it in abstracts are essential conditions for the continued use of any database.

2. All contibuting members to a multidisciplinary database must maintain close ties with professional organizations and research centers. The field is often defined and redefined by the journals and reports published by professional organizations and research centers. Such entities depend upon current and relevant information to carry out their work. In turn, the database depends upon such organizations to contribute items to the database operator. Further, these ties

need to be worldwide in scope and alert to trends as they are developing.

3. The information needs of primary and secondary audiences need to be continually assessed. A multidisciplinary database is only as good as its users think it is. These judgements are made through actual experience. Database operators often think of new and creative ways to provide services that clients do not even want. Constant evaluation can help to indicate that the database is giving its users what they want, in the form they want it, and within a reasonable time frame.

4. Procedures for easy and accurate retrieval should be provided. The current jargon calls for "user friendly" approaches to information retrieval. As more and more users are seeking direct access to online databases, the systems themselves will have to teach individuals how to use the procedures which are unique to that system.(5) Beyond this basic criterion, is the expectation that retrieval procedures will be so designed that multidisciplinary information comes out of a search which might not be highly sophisticated.

5. User costs must be relatively low. No system needs to be overbuilt. Just because it is possible to create many options in the data handling process, it should not be done unless users want it and will pay for it. If local systems can be built with microcomputers or minicomputers, begin there so that

users will use the system which is available at a reasonable cost. As users become more familiar with the value of information, they will seek larger and more efficient systems to fill this need. It is likely that future computer systems will be less expensive by the time the clients are ready for the next level of sophistication.

These criteria are probably not new but they have served the ERIC system well. The firm foundation of the system design and the constant attention to such details as those outlined above, have yielded big dividends in the operation of one of the largest, most frequently used and lowest cost information systems in the world.

The Multinational Dimensions of ERIC

Language is usually a prime determinant in the multinational use of a database. ERIC is an English language database and therefore appeals primarily to the English-speaking world and to others for whom English is a working language. Even though the bulk of the database is in English, a search of the entries since the "language" element was added in 1979, revealed 955 items in French, 596 items in Spanish, 241 items in German, and 33 items in Russian. Other languages are represented in lesser numbers.

Provision for foreign documents to be submitted for inclusion in ERIC is covered by a system policy. A request is made that a 1,000-1,500 word abstract in English accompany all non-English documents as an integral part of the document. Such an abstract is an aid to searchers who are not proficient in the language of the text.(6)

Non-U.S. Representation in ERIC . It must be admitted that ERIC is oriented toward Education and the related social sciences in the United States. However, it may not be as parochial as some people might think. During the five year period 1974-1978, about 4,000 entries from non-U.S. countries were entered into the system. The next five years, 1979-1984, the number increased to about 6,500, not including items from international organizations such as Unesco and IFLA. Calculations derived from several souces indicate that two to three percent of the entire ERIC database comes from non-U.S. sources.

This relatively small percentage represents more than 10,000 document citations and indexing of 121 journals published outside the United States. Every ERIC clearinghouse indexes journals published abroad. There are non-U.S. subscriptions to RIE from 57 countries and subscriptions to CIJE from about 50 nations. Complete texts of mot ERIC documents are available in microfiche libraries in 23 countries. An indeterminate number of countries offer online search services which include ERIC as one of the available databases.

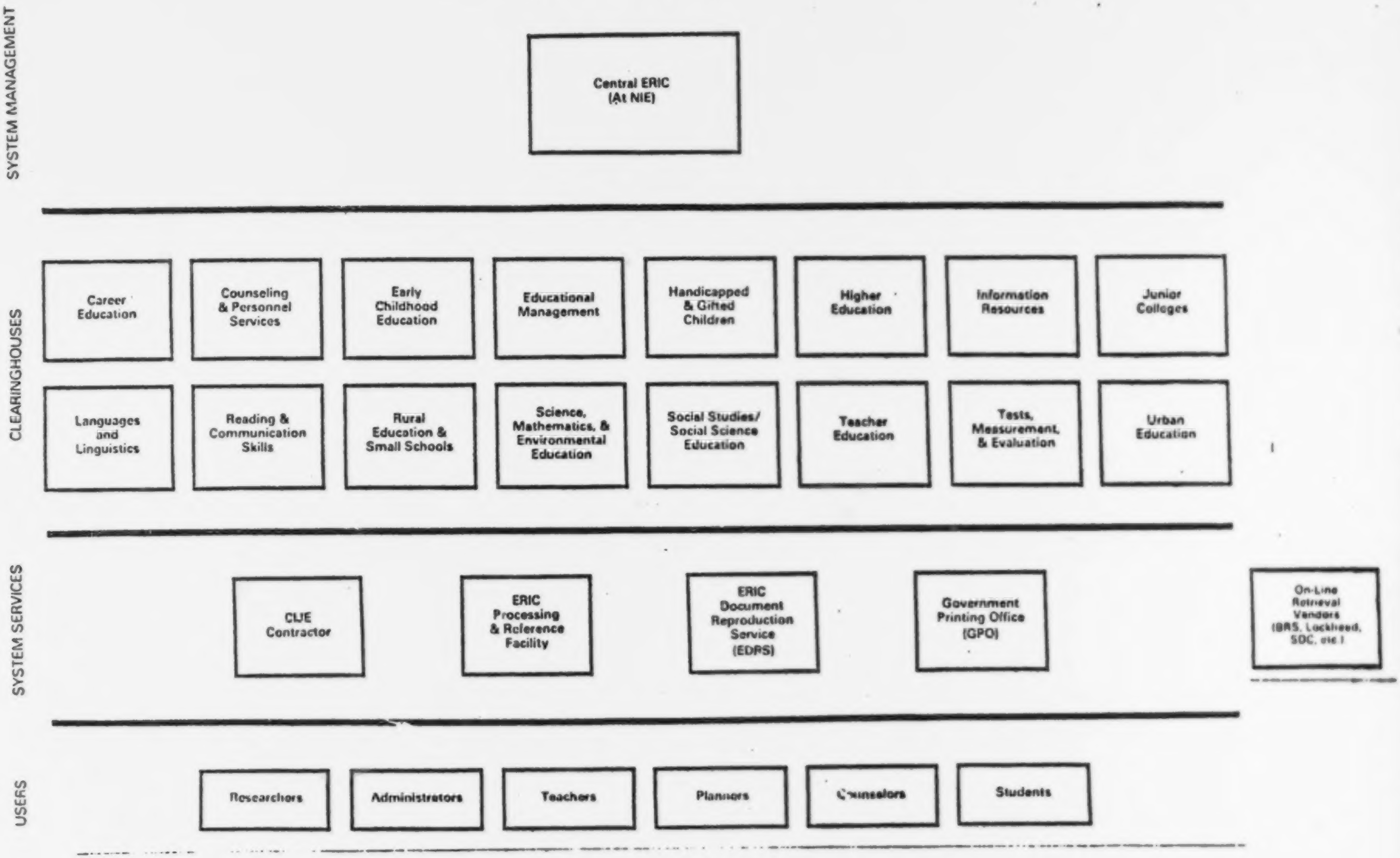
Documents submitted to ERIC for review come primarily from English-speaking countries: Canada, Australia, and the United Kingdom. International organizations, which have not been included in any of the previous data, provide an extensive source of documents. e.g., Unesco, Organization for Economic Cooperation and Development, Council of Europe, World Health Organization, World Confederation of Organizations of the Teaching Professions and (of course) the International Federation of Library Associations.

Conclusions

In keeping with the theme of this conference, the Educational Resources Information Center (ERIC) is attempting to make its information universally available. Its multidisciplinary characteristics and its multinational dimensions make it a unique database for Education and the related social sciences. In its nearly twenty years of operation, ERIC has become a major international resource.

Figure 1

ERIC System Components


SYSTEM MANAGEMENT
Central ERIC (At NIE)
CLEARINGHOUSES
Career Education
Counseling & Personnel Services
Early Childhood Education
Educational Management
Handicapped & Gifted Children
Higher Education
Information Resources
Junior Colleges
Languages and Linguistics
Reading & Communication Skills
Rural Education & Small Schools
Science, Mathematics, & Environmental Education
Social Studies/Social Science Education
Teacher Education
Tests, Measurement, & Evaluation
Urban Education
SYSTEM SERVICES
CIJE Contractor
ERIC Processing & Reference Facility
ERIC Document Reproduction Service (EDRS)
Government Printing Office (GPO)
On-Line Retrieval Vendors (BRS, Lockheed, SDC, etc.)
USERS
Researchers
Administrators
Teachers
Planners
Counselors
Students

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Nordic cooperation - from the view of research and special libraries

by

Tor W. Holm

Head Librarian
Swedish School of Economics
and Business Administration
Helsinki, Finland

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Nordic cooperation - from the view of research and special libraries

The division of Scandinavia into five sovereign states, viz. Denmark, Finland, Iceland, Norway and Sweden is the outcome of a long and chequered history. Over the centuries, the boundaries have been shifted back and forth by conquest, royal marriages and alliances.

Each of the Scandinavian or Nordic states has experienced a temporary merger with at least one of its neighbours. Iceland was first a Norwegian, the a Danish dependency; Norway was ruled by Denmark and later in personal union with Sweden while Finland formed for more than 600 years a part of Sweden. During the Napoleonic era Sweden had to cede Finland to Russia. The Russian period lasted in Finland a hundred years but during that period Finland was able to conserve her Swedish framed administrative and legal system.

During the 19th century the Nordic countries developed their national identities influenced by nationalistic and romantic theories. But there was also a growing feeling of affinity. Academic circles in Denmark and Sweden created the idea of "Scandinavianism" and declared that "a war between Scandinavian brothers was impossible". On a popular level the idea was taken up by the Folk High School movement, which was a brainchild of Nicolai Grundtvig (1783 - 1872) the Danish poet, theologian and educational reformer. It was Grundtvig who built the philosophical and historical foundation for a Nordic cultural superstructure.

The Nordic region has now a population of about 23 million people. This is more than in Australia and New Zealand put together and nearly as many as in Canada. In terms of land "Norden" is bigger than the rest of the whole Western Europe. As from the middle of the 1940's the Nordic cooperation has improved considerably and has been most fruitful in the cultural and social political fields. The cooperation work has been made easier by the similarities in the Nordic organizational systems and the public administrations. All the Nordic countries have in common their society system based upon market economy of Western model together with an extensive social welfare policy.

The Nordic library cooperation in its present form dates back to the 1920's. As from 1926 big joint library meetings have been arranged for all categories of libraries. Nowadays the meetings have been held every fourth year. It can be mentioned that 15 such meetings have been arranged. The latest one was held in Reykjavik, Iceland in the summer of 1984. It was, in fact, the first time such a big meeting has been arranged in Iceland.

In addition to the big conferences different categories of librarians have found it advisable to meet each another. The Head Librarians for the Nordic university libraries and the big Nordic public libraries have thus come together from time to time. It can also be mentioned that different special libraries have arranged contact conferences in some cases yearly. Such categories are for instance the Nordic parlament libraries and the libraries of the leading business schools in the Nordic countries. It goes without saying that such an activity do much to promote good personal relations between the colleagues in the different Nordic countries.

A unique feature characteristic for the joint Nordic library cooperation is that many of the Nordic library representatives at their congresses, meetings and seminars can use their own language. This is due to the fact that the majority of the Nordic peoples speak a variation of a common Norse language. This is why, to an outsider, Norwegian sounds rather like Swedish which is not too far removed from Danish. Between these three countries the language differences are so small that they form no real barriers either in speech or writing. But Finnish has a totally different origin to that of the other Nordic languages and is incomprehensible to most citizens of the neighbouring states. Although the finns sometimes have difficulties in understanding the spoken language they can read Swedish, Danish and Norwegian. All Finns with high school education have studied Swedish. Islandic is different again - and the people of that country generally make use of their more recent historical associations by speaking Danish at inter-Nordic conferences. The Nordic meetings are thus not encumbered in the same way as many other international meetings by heavy charges for translation and simultaneous interpretation.

The big library meetings, notwithstanding their general character, have in principle been directed towards an activity within the public library sector. The Nordic representatives for the research and special library sector pointed out that there was an urgent need of a closer cooperation within these groups. On the national levels there existed already organizations for university and research librarians as well as for the special library employees.

In connection with the IFLA council meeting in Oslo 1947 the first steps were taken towards the foundation of a joint organization. Already the same year the statutes of the Scandinavian Association of Research Librarians (Nordisk Videnskabeligt Bibliotekarforbund) known as NVBF, were approved of.

The NVBF has no personal members but the members of this organization consist of the five national librarian associations connected to the research sector. NVBF is headed by a board of ten members, being two representatives for each country. At the executive committee meetings the decisions must be approved of by the representatives for at least three countries. As a rule, the work is proceeding according to the consensus model. The debate at the committee meetings is usually vivid,but the decisions are as a rule unanimous. The chairmanship circulates and comprises a period of two years. It has come a practise that the deputy chairman is appointed chairman for the following period. As the NVBF has no secretariat it is anticipated that the country to which the chairmanship is entrusted also cares of the practical work. The annual fee of the member countries is calculated in proportion to the number of members in the national associations. The yearly budget is very modest.

At the members´ meetings, which are held every second year, a plan of work is presented as well as a report of the passed two years´ activity. During a four year period one members´ meeting coincides with the big Nordic Library Meeting. During the second member meeting of the four year period the program is more varied and is now often having a theme. That meeting is usually attended by about 200 participants. Besides these meetings the NVBF accomplishes its program by so called round table conferences which usually gather about 30 participants. These are specialists´ gatherings, supported by funds made available by the NORDINFO whereof more later on. NVBF publishes also various reports. In general they contain reports and discourses held in connection with the round table conferences. The scope of the subjects treated at the round table conferences is rather large. During the last years the following items have been delt with:

- Interurban loans (1982)
- Collection of manuscripts in libraries (1983)
- Planning of library buildings (1983)
- Collection building (1984)
- Users education (1985)

A joint Nordic initiative was the ambitious SCANDIA-plan from 1956. The original aim of the plan was to rationalize the acquisition of the marginal literature in less demand in the libraries. This was an effort to create an equivalent to the American Farmington plan for Nordic conditions. With its original object in view one must admit that the SCANDIA plan was a failure. The weakness of the SCANDIA-plan was the absence of a central financing. It was not possible to guarantee any library the additional resources it needed. Morover, at that time nobody had any pronounced idea about the need of a consequent acquisition plan and collection planning in the different participating libraries.

However the special committees appointed in 1950's and 1960's did much useful work when creating contacts and mapping out the provision of literature. As a consequence the plan has now received a new direction and is now acting with another objective within a wider scope.

A project of later date is the NOSP-plan aiming at the creation of an automated Nordic union cataloque of periodicals. This is a long-range project. The first initiative was taken in 1958 but it really started in 1977. In this case also the project can be traced back to an initiative taken within the NVBF.

In course of time the NOSP-plan has been given a central place within the Nordic library cooperation. It has been proved that if a long-term view is taken it is not possible to carry out larger cooperation programs by voluntary work in the associations and with occassional support only from the Nordic governments. A first step towards a better hold of the development was the foundation of a Joint Council for the Scandinavian Councils for Research Libraries. This council was a semiofficial organization financed by the official Nordic budget for cultural cooperation. The following step in the development was the foundation of the Nordic Council for Scientific Information and Research Libraries NORDINFO in the year 1977.

Besides the coordinating functions attended by NORDINFO's elected organs, its secretariat and the committees and advisors appointed and used by NORDINFO, the financing of joint Nordic projects is its most important task. NORDINFO invests much workin mapping out the present situation and in rating the possibilities for new activity which could improve the Nordic information supply. This is of special value during a period when rapid development and new technique involve not only new possibilities but also new problems for the handling of information. NORDINFO supported for instance in 1983 the mapping of the libraries' possibilities to transmit computerized picture information. NORDINFO has a board consisting of three representatives each for Denmark, Finland, Norway and Sweden, whereas Iceland is represented by two persons only. The executive body is the

General Secretariat. Funds are granted by the Nordic council of ministers, which is a joint Nordic cooperative organ on governmental basis and which via the Nordic culturel budget conducts a considerable part of the Nordic cultural cooperation.

In connection with cooperation within the library and documentation sector in **the Nordic countries** NORDFORSK should also be mentioned. NORDFORSK , in English the Nordic association for technical and scientific research, is a joint cooperative organ for the Nordic technical scientific academies. Among other things NORDFORSK arranged previously courses for documentalists. In connection with NORDFORSK's activity the NORDDOK was created in 1972. Organizationally it was a predecessor to NORDINFO into which it became merged.

It is important that governmental and govermental-sponsored institutions are in contact with the field through the libraries and librarians organizations. It goes without saying that a stronger dependence of financing through NORDINFO may be apt to moderate the spontaneity, but on the other hand there is much to benefit from the increase in resources brought about by this inter-governmental engagement. The comparatively small conditions in our Nordic countries - where everyone is known by everyone - give possibilities to a continuous contact also on an informal level. It may be mentioned that all the countries have lively international contacts with organizations and institutions like UNESCO/PGI, FID, IFLA, LIBER and SCONUL, only to mention a few of them of having a general character. In addition there are several more or less firmly organized international associations for different special libraries and documentation services.

Trying to estimate the actual Nordic library cooperation, Finnish Head librarian Eeva-Maija Tammekann says that the aims during the recent years have been to produce devices (impliments) for a joint use of the NOSP and to build up a Nordic infrastructure based upon division of labour (i.e. the SCANDIA-plan) as well as to train library personal and "end users". However we must assure the decision makers that it always pays to invest in librarianship and information. We must give the reliable and diversified information concerning, for instance, the following questions: Will the new technology make all libraries superflous? If not, which will their rôle be? At what rate of progress will the changeover to new medias take place? We must also contemplate - Miss Tammekann says further - the advantages and disadvantages of commercialization. Will the introduction of electronic periodicals mean that only such material will be published, which is considered saleable by the publishing companies? The introduction of electronic periodicals leads presumbably to the abolishment of the subscription fees. And at last: How can a country protect itself against a too strong international dependence? These are questions not only for the Nordic librarians but for the librarians all over the world.

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ONLINE SEARCHING OF SOCIAL SCIENCE INFORMATION IN WILSONLINE AND WILSEARCH

by

Wilhelm (Bill) Bartenbach

The H. W. Wilson Company

Bronx, N.Y., USA

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ABSTRACT

Online Searching of Social Science Information in WILSONLINE and WILSEARCH

The H. W. Wilson Company, best known as a publisher of bibliographic indexes and catalogs has introduced two major online ventures: WILSONLINE and WILSEARCH. The system features of these two services are described. WILSONLINE is an online information retrieval system designed for the "intermediary," the librarian and searcher who has been trained in online information retrieval. WILSEARCH is a user-friendly, menu-driven software product designed for the "enduser," the library patron, to conduct online searches on his own, without any previous training. The various WILSONLINE databases suitable for online searching of social science information are described. The paper concludes with a look into the future and the impending development of optical disc publishing and its impact on the information community.

The topic of this paper will be "Online Searching of Social Science Information in WILSONLINE and WILSEARCH."

(1) The first part will provide some background information on the H. W. Wilson Company as the producer of WILSONLINE and WILSEARCH and the rationale for becoming a vendor and for introducing these two new online ventures.

(2) In the second part the main system features of WILSONLINE and WILSEARCH will be described.

(3) The third part will cover the various WILSONLINE databases suitable for online searching of social science information.

(4) The paper will be concluded with a look into the future with the impending development of optical disc publishing and its impact on the information community.

I. THE H.W. WILSON COMPANY AND ITS NEW VENTURES

The H. W. Wilson Company is best known as a publisher of bibliographic indexes and catalogs. Its indexes can be found in over 100,000 libraries in the United States and abroad.

The company was founded by Mr. Halsey W. Wilson in 1898 and currently employs a staff of over 400. A special effort is made to maintain a close relationship with the library profession. The Indexing Services Department employs 120 professional librarians full-time as indexers, index editors or catalogers. The permanent professional staff fosters cohesiveness in the indexing and editing of bibliographic citations.

The Wilson Company is vertically integrated and as a result all editorial and production work is performed in-house at a single location in New York City. Indexing, editing, data entry, data processing, photocomposition, printing, binding, storing and mailing are carried out within the company.

Literature Coverage

At the present time, Wilson publishes 28 different indexes and catalogs. It indexes over 500,000 articles a year from 3,200 periodicals and catalogs over 60,000 books.

The indexes published by the Wilson Company cover the spectrum of human knowledge, including the social sciences, arts and humanities, sciences, business and law. Its indexes cover the popular, as well as the scientific, technical and professional literature.

New Ventures

Three new products were introduced during the course of the past year: In November 1984 the company introduced WILSONLINE, its own online information retrieval service, designed for the use by librarians, trained online searchers or information professionals. In July 1985, the Company introduced WILSEARCH, a user-friendly front-end system that will allow library patrons to conduct online searches on their own. Also in July 1985, the Company announced the addition of abstracts to its most popular file, the Readers' Guide to Periodical Literature. The abstracts will become available in October 1985.

Why WILSONLINE?

Should the Wilson Company be the vendor as well as the producer of its databases or wouldn't it be better to make the databases available through other vendors? This question has been debated at great length. The rationale behind the decision to become a vendor of its own databases was as follows:

(1) **Retrieval software and the necessary hardware was needed for the** production of the indexes, and could, at the same time, be used for outside customers.

(2) The Wilson Company wanted to have control over the quality of its data. Since WILSONLINE is part of an integrated system, it is possible to make instant corrections.

(3) It is also possible to update databases quickly and to provide timely information. All WILSONLINE databases are updated at least twice a week.

(4) It was possible to price the databases more competitively since revenues do not need to be shared with another vendor.

(5) The company is able to obtain usage information, essential to the marketing of its databases, and

(6) There is no delay in bringing up databases as there are no lengthy negotiations with vendors.

II. WILSONLINE FEATURES

Access: WILSONLINE may be accessed through the telecommunication systems Tymnet or Telenet.

Databases: WILSONLINE currently offers access to 16 databases. Other databases will be added during 1985 and 1986. Databases can be accessed either individually or in combination with other databases. Up to eight databases may me accessed simultaneously.

Boolean logic: The three Boolean operators OR, AND and AND NOT allow searchers to broaden or narrow a search, or to exclude records from a search.

Truncation: WILSONLINE permits the searching of the root or stem of a word to retrieve words with different endings. The retrieval of both singular and plural terms is possible, without having to key both. The truncation symbols can also be used for internal character substitution to retrieve words that are spelled differently.

Browsing: **The browsing command allows the searcher to look at a segment of the index term file to find alphabetically related terms. The system will show the words (and the number of postings) preceding and following the word or phrase entered. The system permits the searcher to move up and down the alphabet and to retrieve any terms displayed by the browsing command.**

Searching Using Qualifiers: Searches can be restricted to particular data elements or fields by using search qualifiers. For example, a search could be restricted to the title field, to the author, to a particular journal or to the controlled vocabulary.

Online Thesaurus: To identify controlled vocabulary terms, or subject headings, the searcher may consult the online thesaurus that displays the subject headings and all related terms. In separate columns the display indicates the number of postings, the number of related terms, and the type of relationship, whether it is a broader, narrower, related or a "used for" term.

Automatic switching: When a searcher enters an indexing phrase that is a "See" reference, WILSONLINE will automatically switch to the preferred heading and will provide the number of postings for that subject heading.

Free Text and Controlled Vocabulary Searching

There have been numerous debates about free-text searching versus controlled vocabulary searching and which of the two is the more effective searching method. Mary Ellen Sievert and Bert R. Boyce describe the changing perception of the usefulness of controlled vocabulary in searching. (1)

It is generally accepted that free-text searching, or the post-coordination of terms, results in high recall, but low precision or relevancy. Free text searching may result in false coordination of terms, or "false drops" as they are commonly called. Precision can be improved, however, through the use of search qualifiers and proximity operators. On the positive side, it can also be said that free text searching allows a searcher to use very specific, new, trendy terms or jargon, that have not yet been included, or perhaps will never be included, in the controlled vocabulary. Such terms as Reaganomics, Yuppies, Skinheads, etc., come to mind.

Controlled vocabulary searching, the searching of pre-coordinated terms, generally results in low recall, but high precision or relevancy. It requires, however, a detailed knowledge of the indexing language used for a particular index. Many librarians are familiar with the indexing vocabulary used in the popular printed Wilson indexes and this knowledge proves to be very useful in online searching. The success of controlled vocabulary searching naturally depends to a large extent on the quality of indexing and the caliber of the indexing staff as Nancy J. Williamson observes:

> "Basic to successful subject retrieval is effective subject indexing and cataloging, the requirement for which is competent indexing, based on an understanding of the relationship among users, documents, indexing languages, and the available technology." (2)

To maintain high quality and consistency in indexing, the Wilson Company employs experienced professional librarians that work on a full-time basis at a single location. The indexers of the Wilson Company spend considerable time in subject analysis of periodical articles and books and in the assignment of appropriate subject headings. The assignment of subject headings is carefully reviewed by another professional staff member to assure accuracy and consistency. All controlled vocabulary is further validated by an automated authority control system that will not allow an invalid term to be entered into the database. Likewise, personal or corporate names used as subject headings are validated. Great care goes into the establishment of the Wilson authority files. Index editors at the Wilson Company make a concerted and continuing effort to improve the indexing vocabulary, to make it current and to reflect the terminology found in the literature indexed. Once a week the Wilson Company computer generates a "No Postings Report" that lists all those terms entered by WILSONLINE searchers that retrieved zero postings. The report is used by the editors as a guide in determining whether or not there is a need for a particular subject heading.

In WILSONLINE the controlled vocabulary can be searched three ways:

(1) Heading/subheading combinations can be searched as a single unit.

(2) Main headings or subheadings can each be searched as a single unit. (Headings or subheadings may be single words or multiword phrases).

(3) Every single word in a subject heading phrase may be searched individually in the Basic Index or combined with other terms through Boolean operators.

WILSONLINE allows for free-text as well as controlled vocabulary searching and often both types of searching are combined to achieve optimum search results. This flexibility in searching makes it possible to take advantage of the interactive capability of the WILSONLINE system. It allows a searcher to broaden or narrow a search while online. Raya Fidel expresses the advantage of online searching succinctly: "The most important advantage of online searching is that searchers can revise their search plan throughout the entire search process, and more specifically, they can modify their query formulation at any step of the move." (3)

Ranging: The ranging feature is used to limit a search to a range of years (or other numeric values). It is possible to limit retrieval to items with a publication date earlier or later than specified.

Printing: Some of the strongest features in WILSONLINE are the different display or print formats and the ability to tailor them to ones own specifications. There are basic, short and full print formats and in the book indexes it is possible to print a record in a catalog card format. The system will allow the searcher to spell out the full name of each data element, to include or exclude any of them, to specify the order of printing of elements or to print only information contained in a single data element. All print formats can be used for offline printing.

Saving Searches: WILSONLINE has a command that allows the searcher to save a particular search strategy, either to use it in other databases or to recall it at a later time to update a search. It avoids the rekeying of data and the Wilson computer will store the search strategy at no cost to the searcher.

Online Information and Assistance: WILSONLINE provides online assistance through Help and Explain commands. The company also provides assistance through a toll-free telephone number.

Special Commands: WILSONLINE has a number of special commands. For example, a display command will allow the searcher to review the search history of a particular search. A rename command permits the renaming of any WILSONLINE command or any Boolean operator to a command of one's own choosing.

Pricing: WILSONLINE pricing is very competitive. The connect hour charges range from $25 to $65 and telecommunication charges are $8 per hour. WILSONLINE does not have any sign-up, password, online print or storage charges for saved searches.

The Company provides for a pay-as-you go option, with monthly invoices, or a subscription option, where the library will pay an annual subscription fee and receive a statement each month showing online usage. The Wilson Company also charges a lower rate, if the library subscribes to the corresponding printed index. The Company believes, that a print subscriber has already contributed to the creation of the database which is shared by both the printed and the online product.

WILSEARCH

WILSONLINE has been designed for the so-called "intermediary", the professional librarian who has been trained in online information retrieval. The rapid development of microcomputer technology has brought about a change in the perception of the information community that makes it possible for the library patron or the so-called "enduser" to do his own online searching. As a result of this development, the Wilson Company decided to develop a new and user-friendly microcomputer software product, called WILSEARCH. It was designed for two major purposes: (1) To simplify online searching, to make it possible for a library patron to carry out online searches, without any previous training. (2) To make online searching affordable to the library patron by shifting the time-consuming activities from the mainframe to the microcomputer.

WILSEARCH is a menu driven front-end system. The WILSEARCH software permits the searcher to select the databases and to develop the search strategy by responding to menu options and by filling out a search screen.

Database selection may be left to the computer by specifying broad search categories. The software has been designed to select appropriate databases. However, the searcher also has the option to select any WILSONLINE database of his/her choice.

WILSEARCH allows searching by author, title, subject, organization, journal title, date or range of dates, or classification number. It is possible to do Boolean searching (AND and OR), to use truncation symbols and to automatically repeat the same search on different databases.

When the searcher has developed a strategy by filling out the search screen the system automatically logs on, searches, shows the results and downloads the record to the disk in the personal computer. Following downloading, the system automatically logs off and the patron has an opportunity to review the downloaded records on the personal computer and can decide whether or not to print any of the records.

The WILSEARCH software on a floppy disk is made available through an annual licensing agreement and a subscription fee that makes it possible to charge per search. Since most of the time-consuming strategy development and keying is done offline, on the personal computer, WILSEARCH does not have to utilize valuable, expensive mainframe computer resources. For that reason it was possible to allow pricing per search, rather than by connect hour. Depending on the subscription paid by the library, the cost can be as low as one dollar per search. If the search results in zero postings there is no charge. A search is defined as the downloading of up to 10 records.

III. WILSONLINE SOCIAL SCIENCE DATABASES

What are the social sciences and what are social science databases? It is not always easy to define the social sciences. The following disciplines are generally included in the social sciences: economics, political science, psychology, anthropology, sociology, history and geography.

Thelma Freides makes the following observations:

> "Very generally they are the fields whose interest centers on observation and explanation of the actions of people in society: what people do and why, and under what circumstances they do one thing rather than another...Several other fields of study...devote their attention to patterns of behavior operating in particular types of institutions and social relationships. These are the "applied" fields, so called because they concentrate on the practical issues arising in some portion of the social arena, and attempt to apply scientific knowledge to the solution of concrete problems. Fields,

such as business and public administration, labor and industrial relations, social work, education and in some degree, law can be numbered in this group." (4)

Using this definition we can look at the WILSONLINE database that covers the social science disciplines as well as those covering the so-called "applied" fields.

Social Sciences Index

The major social science database produced by the Wilson Company is the *Social Sciences Index*, covering 300 of the key international English-language periodicals in the social sciences, published primarily in the United States, Canada and Great Britain. As an interdisciplinary social science index it covers the full range of the social sciences, including economics, psychology, political science, anthropology, sociology, geography and area studies. The index is particularly strong in politics, international relations, public administration, law and criminology. Among the many topics covered are consumer affairs, ethnic studies, feminist studies, urban studies, and economic, social, political aspects of contemporary issues. The index includes book review citations of social science monographs.

The *Social Sciences Index* was origninally published as the *International Index* from 1907 to 1965, when it became the *Social Sciences & Humanities Index*. In 1974 the two became separate indexes. The split-up of the *Social Science & Humanities Index* was in response to requests by subscribers who desired a substantial increase in coverage in the fields of humanities and social sciences.

The H. W. Wilson Company maintains a close relationship with the American Library Association. ALA established a Committee on Wilson

Indexes within the Reference and Adult Services Division. The Committee reviews the periodical indexes on a regular basis and advises the Company on indexing and editorial policy. The Committee prepares studies on the indexes and proposes periodicals to be considered for indexing. A voting list is prepared and the subscribers vote which periodicals they wish to see indexed. The Wilson Company abides by the decision of the subscribers. Upon review of the Social Sciences Index the Committe on Wilson Indexes prepared a voting list and the subscribers elected 263 periodicals, including 185 titles which were not previously indexed in the Social Sciences & Humanities Index. Coverage was subsequently expanded to 308 periodicals. The new Social Sciences Index provides a far broader scope of coverage of social science information than before. One of the results of the split-up of the Social Science & Humanities Index was that History was included in the Humanities Index. One of the reviewers states: "Some historians and social scientists might question the decision to include history in the Humanities Index." (5) It is certainly something the online searcher needs to be aware of when searching for information on history. The online database has a starting date of February 1984. The Wilson Company is in the process of converting the previous volumes of the Social Sciences Index, beginning with 1974.

Multifile Searching

The primary WILSONLINE database for social science information is, naturally, the Social Sciences Index. However, it is often advantageous to search other databases to find interdisciplinary information or to narrow a search to a particular aspect of a subject. Allan Foster makes a strong case for multi-database searching in the social sciences. (6) One of the most useful features in WILSONLINE is its multifile searching capability that allows searching of up to eight databases at one time.

Searching the topic of "Race discrimination in South Africa" one would naturally turn to the Social Sciences Index. However, there are at least ten other WILSONSLINE databases that will include pertinent information on the topic at hand. Each database could be searched individually or a multifile search could be conducted.

The Bibliographic Index should be the starting point for any successfull research. The Index is a subject list of bibliographies published separately or appearing in books, pamphlets, or in some 2,600 periodicals. All Wilson Company indexes will list bibliographies and searchers are able to retrieve them by entering the subheading Bibliography together with the name of a person or subject. By using the article contents code the searcher can limit a search to bibliographies and by using the physical description code for bibliographies it is also possible to limit a search to those articles or books that include bibliographies.

To find information on the legal aspect of race discrimination the Index to Legal Periodicals should be consulted. The Index covers all aspects of law, including civil rights laws and constitutional law. Cases and statutes can be searched in the Index to Legal Periodicals.

The Education Index, covering all areas of education, would provide information on discriminatory practices in the educational system.

The Business Periodicals Index would be a good source of information on discrimination in employment and on issues of investments and disinvestment in South Africa.

The Cumulative Book Index and the Library of Congress MARC Books file will have substantial information in monographs and government documents on race discrimination.

The Book Review Digest will provide a short abstract on the book being reviewed and excerpts of reviews of books on race discrimination. Book reviews may be found in all Wilson periodical indexes and an online search can be limited to book review citations. Book reviews may be retrieved by author, title, or subject heading.

The Essay and General Literature Index will provide access to information in essay collections and anthologies. This Index functions as a supplement to material not generally found in card catalogs. The database will become available on WILSONLINE in 1986.

Much social science research deals with persons and it is, therefore, most important to have access to biographical information.
A recent article on name searching by David M. Pilachowski and David Everett describes the difficulties in retrieval of biographical information. (7)
Biography Index will be a valuable source of biographical information on the major figures dealing with discrimination in South Africa.
All Wilson indexes include biographical information and the Company has established a Names department that has created a name authority file used by all indexes to maintain consistency in the entry of names.

As database producers and librarians we should never forget the large number of library patrons that are interested in the popular literature, especially on economic, social and political subjects. The Readers' Guide to Periodical Literature is the most popular of the Wilson Company indexes in coverage, in number of subsriptions, and in online usage. The Readers' Guide indexes articles of the most popular periodicals to which most libraries subscribe. It
is the one index most high school students and library patrons turn to for information written on almost any topic. One of the reviewers

calls it "The closest thing to mom in the library--soft, all-embracing, ready to educate us for anything." (8) Teachers and librarians depend on the Readers' Guide for introducing students to the procedures of independent research. Once students have mastered the use of the Readers' Guide they can easily transfer the skill to any of the other Wilson indexes. The Guide is particularly strong in current topics and would be a good starting point for general background information on race discrimination in South Africa. It is also the most current index and would cover the latest news events occurring in South Africa.

IV. THE FUTURE DEVELOPMENT OF OPTICAL DISC PUBLISHING

The H. W. Wilson Company is investigating the possibility of optical disc publishing. This new development in publishing is well on its way to becoming reality. During the 1985 Annual meeting of the American Library Association several optical disc systems were shown. It is certain that within the year a variety of optical disc systems will be offered. There is still some uncertainty, whether the 12" videodisc or the 4.7" CD ROM (Compact Disc Read Only Memory) will succeed. The impressive amount of data that can be stored on a small optical disc will dramatically change information distribution. A compact disc, weighing only 16 grams can be used to store 150,000 pages of information, or 600 megabytes. Software has been and is being developed by a variety of companies that will allow librarians or library patrons to retrieve, display or print information on a personal computer.

The technology for optical discs has been developed over the last decade, initially for the distribution of music and movies. It can now be utilized for the storage and retrieval of information. Data are coded on a master disc by using a laser to burn micron-sized holes or pits into a surface of aluminum. The discs are produced by high-volume stamping machines at a rather low per copy cost, probably under $10 a copy. The searching software, as well as the database can be put on the same disc.

There are a number of advantages that make optical discs very attractive to database producers and libraries.

Advantages to Producers

(1) Database producers will be able to bypass database services and retain control over the distribution of their published information. In a way, distribution will return to the same type of relationship with customers as the producers have been accustomed to as print publishers.

(2) Database producers will not need to share revenues with database services.

(3) Database producers will be able to produce the optical discs at a substantially lower cost than producing the printed publication. At the same time, the economies of scale will depend on the number of copies sold, rather than the number of connect hours.

Advantages to Libraries and Library Patrons

(1) While the library will have to make an initial investment into a microcomputer, optical disc player and the database, the subsequent use of the database is unlimited and is not affected by connect hour, telecommunication or print charges. In fact, the more searches carried out, the less it costs per search. Libraries will have fixed costs and can budget for their expenditures.

(2) Access to information will be in-house and not dependent on database and telecommunication services. This has great potentital for libraries at remote locations and may have a dramatic impact on libraries in developing countries. A database on an optical disc can easily be put in an envelope and mailed as a letter to any

location. Optical discs are extremely durable. The information on the aluminum disc is protected by plastic covers and scratches will not affect the retrieval of information.

(3) Library patrons will not be under the time pressure as in online searching, while at the same time utilizing the powerful methods of online retrieval: free-text and controlled vocabulary searching, combining concepts through Boolean operators, qualified searching, ranging, limiting and browsing. Searchers will not be penalized, if they take their time and try out various search techniques.

Optical disc technology has generated uncertainty among database producers, whether it will become the replacement technology for online services or for print publications, or for both. As a result, the question of pricing is uncertain at this time.

A disadvantage of optical disc technology is the fact that a disc can not be updated, so no new information can be added to an existing disc. New discs with updated information will have to be produced. There is no doubt, that optical discs will be ideal for historical or retrospective data, while the most recent data may still be offered online through database services. Hybrid systems will probably be developed. It is easy to envision a scenario whereby retrospective data would be available on optical discs and if there is a need for more current information, online services would provide it, thus complementing optical discs. Ideally, the search language for optical discs and for online retrieval should be identical.

There is no doubt that this new technology will have a revolutionary impact on information distribution and access. It will be another step closer towards the creation of the electronic library of the future.

FOOTNOTES

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Division of Special Libraries

Section of Social Science Libraries

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UAP PROGRAMME AND INFORMATIONAL & BIBLIOGRAPHICAL ACTIVITIES OF VGBIL(SOCIAL SCIENCES)

A.Kasyanenko

Bibliographer

VGBIL

Moscow, USSR

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UAP PROGRAMME AND INFORMATIONAL & BIBLIOGRAPHICAL ACTIVITIES OF VGBIL (SOCIAL SCIENCES)

The All-Union State Library of Foreign Literature (VGBIL) is a cultural institution combining the functions of a public multidiscipline library, covering worldwide literature on humanities, those of a methodological centre for libraries in the USSR, dealing with foreign literature, and a research and informational institution in the fields of social sciences, fiction, librarianship, book preservation and restoration.

The Library is incorporated into a state information system for science and technology, acting as a Centre, providing information in the field of librarianship abroad.

The Library coordinates its acquisitions and information activity with V.I.Lenin State Library of the USSR, Institute of Scientific Information on Social Sciences of the USSR Academy of Sciences and other allied institutions and libraries.

Almost all departments of the Library are engaged in the informational and bibliographical activities. They include all kinds of reference and bibliographical services, indexing, compilation of union catalogues jointly with other libraries, compilation of bibliographies and guides to library catalogues, reference filing, information of users on librarianship in foreign countries, organization of book exibitions and participation in the All-Union coordination system for informational and bibliographical activity of the USSR libraries and information centres.

REFERENCE AND BIBLIOGRAPHICAL SERVICES

The reference staff of the Library provides about 200 unpublished bibliographies and lists of literature annually. These materials are usually requested by scientists, researches, institutions and libraries.The subjects of such unpublished bibliographies and lists vary from "Youth Movement and Organizations in Latin America" to "Use of Computers in Language Teaching".

All unpublished bibliographic materials are kept in vertical files and are used by the library staff, patrons, other libraries and information centres in the USSR and abroad. The potential users are informed about the unpublished bibliographic materials through Library publications, as well as through publications of information centres. There are more than 5 300 unpublished bibliographies in a reference collection right now. This collection is broken down into four parts: General, Personalia, Language Teaching and Linguistics. Each part of the collection has a subject and author indexes.

In order to use the information on unpublished bibliographies more effectively, the USSR State Committee on Science and Technology has passed a regulation called "Procedure for Organization and Usage of Collections of unpublished Bibliographies and Lists, Compiled by Technical Information Bodies and Libraries on Requests from Scientists, Specialists and Industry Officials".

In accordance with the regulation there was established a network of collections of unpublished bibliographic materials. The information about new materials of this kind is sent to the following All-Union Information Centres: Informkul'tura, the Institute of Scientific Information on Social Sciences of the USSR Academy of Sciences and the Information Centre of the State Public Scientific and Technical Library. The mentioned centres regularly publish the information about the new unpublished bibliographic materials in a number of periodicals and serials through which it becomes available to researches, specialists and librarians. The most comprehensive publications of this kind are:

- List of Unpublished Bibliographies in the Information Centres and Libraries of the USSR (annual);
- Systematic Index of Unpublished Materials, Received by INFORMKUL'TURA (quarterly).

The Library publishes information on unpublished bibliographic materials in the following publications: Bulletin of the New Acquisitions of VGBIL (36 issues annually), Informational and Bibliographical Publications of VGBIL (informs about forthcoming publications, annual), Language Teaching (quarterly).

The system of reference files is also an important instrument of familiarization of patrons with library's

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holdings in the field of Social Sciences. These files in Russian and foreign languages are very important for reference also. There are more than three hundred subject files on Social Sciences and Fiction in the Library presently. They incorporate more than five million reference cards, about one hundred and fourty thousand cards are added to the files annually. More than two thousand periodicals titles in 39 languages are analysed for this purpose every year. The files exist since 1950, they are organized on a countrywise principle and contain an important information on a current political situation and cultural life in foreign countries.

To make patrons familiar with the new acquisitions to the reference collection, the staff organizes for them bi-annual surveys of new acquisitions and consultations on how to use new reference tools.

BIBLIOGRAPHIC ACTIVITY

Apart from unpublished bibliographic materials the Library staff prepares a number of subject bibliographies and bibliographic series. As far as Social Sciences are concerned, there are the following series of bibliographies in print:

- Antifascist Resistance in Europe during the World War II (already issued: Resistance Movement in France, 1940-44, The Struggle of Prisoners of Concentration Camps and Prisons - Special Form of Resistance et al);
- The Cultural Relations between the USSR and Foreign Countries (already published volumes on relations with Cuba, GDR, FRG, Yugoslavia, Italy, United Kingdom, USA, Canada and others).

The unique form of co-operation between the Library and its foreign partners is a joint publication of subject bibliographies. Presently, the Library has the agreements and protocols concerning joint publications with the libraries of seven countries. This work started in 1975. Since then about fourty five joint bibliographies have been prepared. Here are the titles of some of them: People's Liberation War in Yugoslavia, 1941-45 (published jointly with the People's Library of Serbia in Belgrade), The Publications on Slovak National Uprising in the Soviet and

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Czechoslovacian Press (joint publication with the University Library in Bratislava) etc.

PATRONS INFORMATION ON LIBRARY's ACQUISITIONS

Other libraries and patrons get the information on new Library's acquisitions through three main channels: distribution of printed cards all over the country, the publication of the Bulletin of the New Acquisitions and weekly exibitions of new acquisitions.

Important sources of information for specialists in Social Sciences and information centres on availability of foreign publications in our Library are Union Catalogues. These catalogues are compiled jointly with other libraries. Presently, the Library is engaged in mutual work to create a multivolume Retrospective Index to Foreign Periodicals and Serials, 1700-1975(Social Sciences and Humanities). This work is to be done jointly with the V.I.Lenin State Library of the USSR and the Institute of Scientific Information on Social Sciences of the USSR Academy of Sciences. This enterprise is planned to be a Union Catalogue of the USSR largest libraries. It will include foreign periodicals on Social Sciences available in eighty largest libraries of the country. The Library also participated in the compilation of Index to Current Foreign Periodicals in the field of Social Sciences, available in Moscow libraries. The Library compiles and publishes a Union Bulletin of New Foreign Books on Social Sciences Available in the Libraries of the USSR (bi-monthly).

SPECIAL INFORMATION CENTRE ON LIBRARIANSHIP ABROAD

The Centre was established in the Library six years ago. The main goal of the Centre is to study foreign experiences in the Library Science and Librarianship and to provide librarians and information specialists with the data on latest developments in this field.

In order to fulfill this task, the Centre analyses material from different countries and publishes information in the form of reviews, bibliographies and newsletters. It also gives recommendations to the Acquisitions Department.

The Centre publishes a monthly annotated index, entitled

"Library Science and Bibliography Abroad", a monthly newsletter and an annual review which is distributed in the country and abroad.

Here are the topics of some newsletters, released in 1984-1985: Some Aspects of Librarianship in Nigeria, The Rare Books and Mass Neutralization of Paper, Women in British Librarianship etc.

DISTRIBUTION OF THE LIBRARY PUBLICATIONS

The information about published, as well as unpublished bibliographies appears in an annual catalogue of forthcoming publications entitled Informational and Bibliographical Publications of VGBIL. Every September this catalogue is sent to more than one thousand three hundred addresses in the USSR and abroad. In order to get a subscription or a single copy one has to fill up an attached form. The prices for the Library publications are quite moderate. They vary from three roubles for a hard-cover comprehensive bibliography to fourty kopecks per a paperback edition. All Library's publications can be also obtained through the interlibrary loan.

BOOK PROMOTION ACTIVITY

Foreign books exibitions, lectures on literature trends, reviews of new publications all over the world do a great deal for promotion of the Library's holdings.

Those librarians who deal with library users should know how important it is for some readers to browse through a book before they decide whether it is useful or not. Some of the users even ask librarians for permition to go to the stacks area to look through the book shelves. It happens partly because sometimes the information recorded on the catalogue card or in the bibliography is not sufficient enough to make a decision. That is why the book exibitions are quite useful for an introduction of the Library's holdings. The Library organizes dozens of book exibitions every year. Some of them include new foreign books from the Moscow's bookstores.

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ASSISTANCE TO PATRONS IN LANGUAGE STUDYING

It is impossible to speak about availability of foreign books without mentioning the language problem. It is obvious that availability of a foreign language book in a certain country depends on the number of persons , possessing the knowledge of foreign languages. Almost all users of the Library are able to read in at least one foreign language. For those who have a problem with a language or want to study one , the Library provides a special assistance. There is a special section and reading-room, equipped with the audio-visual aids. It has a collection of tapes, records and films with language courses of all levels and specially trained staff of consultants who provide the assistance.

The All-Union State Library of Foreign Literature has holdings of 4 300 million storage units in 135 languages. 50 % of these holdings are in a circulation annually. The Library's purpose is not only to collect foreign books and make them available to it's patrons, but to promote the greatest achivements of world culture, to shape the interests and tastes of readers.

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Division: SPECIAL LIBRARIES
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INTERNATIONAL BIBLIOGRAPHIC STANDARDS IN CARTOGRAPHIC ARCHIVES: THE NATIONAL MAP COLLECTION, PUBLIC ARCHIVES OF CANADA, EXPERIENCE

By

Hugo L.P. Stibbe
Chief
Documentation Section
National Map Collection
Public Archives of Canada

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Introduction: the setting

In many countries, the national library or equivalent institution and the national archives have collections of maps; the former almost exclusively printed published maps and the latter manuscript maps and government cartographic records. In some countries both the national library and archives are part and parcel of one and the same institution and in such cases that institution holds both manuscript and printed published maps in one or several collections.

In Canada, the situation is different from that in most other countries. The National Map Collection is one of eight "media" divisions of the Archives Branch of the Public Archives of Canada. It has the custody over all manuscript maps, printed published maps as well as government cartographic records and is also the home of the National Architectural Archives. It is, therefore, the one institution in the country where all cartographic materials of national significance are housed and administered. The National Library of Canada does not have a map collection.

When the National Map Collection of the Public Archives of Canada was looking for ways and means to automate its cataloguing procedures in the early seventies, it was only natural that it first looked at the then emerging library automation systems, some of which were already operational. Natural, because till then the manual processes and procedures used in the National Map Collection were based on library cataloguing techniques for cataloguing single maps. There were no universally accepted models available for description and access to archival materials, leave alone standards for such description and access.

The majority of maps in the National Map Collection at that time were not organized on the basis of the archival principles of provenance and respect des fonds,[1] nor acquired that way. The one section in the Collection that had a number of "collections" arranged and organized on the basis of provenance was part of the then Canadian Section and contained materials that belonged to government Record Groups (RG's) and also had the beginnings of the National Architectural Archives with collections from various architectural firms. The section charged with the responsibility to look after these collections was created in 1976 as the Government Cartographical and Architectural Records Section of the National Map Collection. A number of smaller collections are still maintained in the Modern Cartography Section and the Early Canadian Cartography Section (sections also created in 1976) as Manuscript Groups (MG's). These contain cartographic materials from important individuals, such as Trevor Lloyd, a well known Canadian geographer, and McDonald, a private Canadian map collector. Thus was created in one media division of the archives a situation where there were collections arranged and organized by provenance, and individual items that represented units for description much like that in libraries.

This situation afforded ideal opportunities for experimenting with library systems for automated cataloguing. The challenge was to find a way to integrate in one system library-type catalogue records and descriptive records related to archival collections arranged and organized on the basis of provenance.

One may well ask why single item library-type bibliographic records and archival descriptive records should be integrated into one system? Why should this be a precondition for the National Map Collection's automated system? There are a number of reasons. Firstly, it would not have been a challenge to create separate systems for the two types of documentation. Secondly, and more importantly, creating separate systems would have defeated a major objective of automation. Automation should not be applied solely for the sake of efficiently producing what is already produced manually. Rather, the full potential of the capabilities of the computer should be utilized. This potential lies in the efficient and rapid on-line retrieval of information not possible with manual systems, and not even possible with the products (in the form of hard copy) that would be identified for output from such computer systems if such systems were designed as batch systems. On-line information retrieval can be done more economically when all the data is present in one system. The third reason is plain economics. The National Map Collection would simply not have been able to afford a number of different systems created for different purposes with machine records having different structures run presumably with different software or with numerable modules of the same software, even if they were mounted on one and the same computer. The Public Archives did not have the expertise or the necessary Electronic Data Processing (EDP) support staff to maintain complex software, leave alone design and write such software. These serious constraints (lack of resources in both EDP support staff and funds) made going to a custom-made system out of the question. The challenge then was to make use of existing systems, primarlily designed for the processing of library catalogue records, and adapt them to the requirements of archival descriptive records, generically and collectively referred to by archivists as "finding aids".

The very first task was to examine in detail what happens to archival material from the time it is acquired and arrives in the institution to the time it finds its permanent resting place on the shelf or, in the case of cartographic materials, in the drawers of that institution. In particular, what kinds of documentation are generated in the processing steps between arrival and final disposition and what is the relationship of the documentation generated to the units in which the material is organized, as well as the relationship between these units and the resulting documentation.

Systematization of archival processing and documentation: Some concepts and principles

In examining the steps in the processing of archival materials in the National Map Collection it became evident that the documentation produced at each step resulted in records (descriptive or administrative) that did not have the kinds of relationships to each other that would make them amenable to automation simply because there was no systematic overall approach to the description process. Each manually produced finding aid stood more or less on its own with no identifiable relationship to any other even if it described material in the same group.

At the same time, methods and procedures were identified that would prevent duplication of the data capture process as much as possible, and thus would enhance the general work flow. For example, it was found that during processing of a typical archival accession, the same data elements were recorded many times, but in different forms and in different sequences. The causes for this duplication of work and lack of consistency in recording the data elements were traced back to a lack of systematic processing procedures on the one hand, and a lack of standards of description on the other hand. There was also a general lack of authority control over access elements that needed such control. It was thought (naively in retrospect) that the duplication of work could be eliminated by capturing the data elements only once in a standardized format as soon as they became known (at the beginning of the processing function for some data elements and later on for other data elements) and then upgrading the data elements when they changed in the course of processing. As far as the standard for description and access was concerned, it was quickly decided that it would have to be the Anglo-American Cataloguing Rules, Second edition (AACR2), particularly because of the efforts put into this standard, and the later published Cartographic Materials: a Manual of Interpretation for AACR2, by members of the staff of the National Map Collection and the commitment the National Map Collection had made to the use of this standard.

In order to define and outline an overall system for archival description and access, the next step that needed to be carried out was the analysis of the types of descriptive records that are created in the processing of archival materials from the time they are acquired to the time they find their permanent resting place in the institution, the machine-readable records that are derived from them, and the relationships between them. The types of records and the relationships between them needed to be precisely documented and defined. Until recently, none of this work had been done, nor could we find in the literature any references to either these kinds of definitions or a model of archival description that could be followed.

One principle that we all consciously or unconsciously apply when we produce descriptive documentation of the kind and for the purpose of what we are speaking about here, is what we have come to call "the principle of object description", i.e., when creating a descriptive record, that record represents the object. What is described is the object, no matter how the "object" is defined. For example, when an accession record is created, the record describes the accession; the accession is the object. This principle is the same as that expressed, either implicitly or explicitly, in the International Standard Bibliographic Descriptions (ISBD's) and the national or international cataloguing codes derived from them. The principle that "...the starting point for description is ... the item in hand..."2) may be self evident to librarians, particularly when the item in hand is a single physical object such as a book, but is not so evident when groups of materials are described with a single bibliographic description. It becomes even more obscure when a whole archival collection, arranged by provenance, is described as a single "item". Nevertheless, the concept is crucial and needs to be rigidly adhered to if the integrety of the data elements, the information contained in the record describing an archival collection, is to be maintained.

In the above case, the descriptive record becomes the substitute for the accession itself. Generally, the records become the substitutes for the objects. From this it follows that if an object disappears or becomes disassembled so that it no longer contains what it originally did at the time the documentation was created, the record no longer represents what it describes and the integrity of the information contained in the record is disturbed. Indeed, the whole descriptive record gives false information at best and, at worst, represents nothing. Either the record has to be changed to reflect the new situation or the object of description cannot be disturbed once it is documented.

It was decided to develop two systems to handle what, from a systems point of view, are basically incompatible requirements of processing and bliographic data elements, both of which are needed in archives. This sounds contradictory to what has been said above, namely that the National Map Collection could not afford separate systems. This is true, but as will be seen later, one of the systems can be run quite cheaply on microcomputers. One system will record the information that is highly volatile, i.e., the information that changes constantly. Such information relates to data created during the processing stages of collections. Generally, this is information created from the time the material is acquired to the time it has been arranged. After the material has been arranged, data start to stabilize. At this point permanent records can be created and stored on a data base for information retrieval.

For the latter type of records, large storage capacities are required because the records are relatively permanent and cumulate over time. There is, in other words, a growth curve associated with this type of data base that is indefinite. For the former system, the records are volatile, not permanent and only created as an intermediate step towards full physical and intellectual control. These temporary "processing records", as we have called them, are generally only for internal use by archivists, administrators and managers. Records created during processing are not upgraded. Rather, data elements that contain essential information for the end user are carried over (replicated) in the permanent (stable) records. Inherently unstable status and processing information, such as the condition of the material, conservation status and other processing status data, are not carried over in the permanent (stable) records. Once the full and final records have been created, the information contained in these intermediate processing records no longer needs to be consulted as frequently as when the material was still being processed. At this time the machine-readable processing records can be stored off-line and reports can be printed on hard copy, paper, cards, or whatever product seems to be most suitable, for occasional consultation that may be required.

In short, we believe that the processing records can be created, maintained and manipulated in a relatively inexpensive microcomputer environment, configured in a local area network. In line with their utility and limited life cycle, they will stay on-line until the material has been arranged and permanent, more stable descriptive records have been produced.

In all of this, the aspects of classification and indexing for documentary purposes and archival systems of arrangement based on the principle of provenance and respect des fonds must be respected. Classification for records management purposes is done by the creators of the archival records during the time they are active. It is done by the originators of the documents and by records managers in the originating institution in accordance with the schedules in use for records management purposes. It is basically a records management function. It is during this time that "fonds" are created.

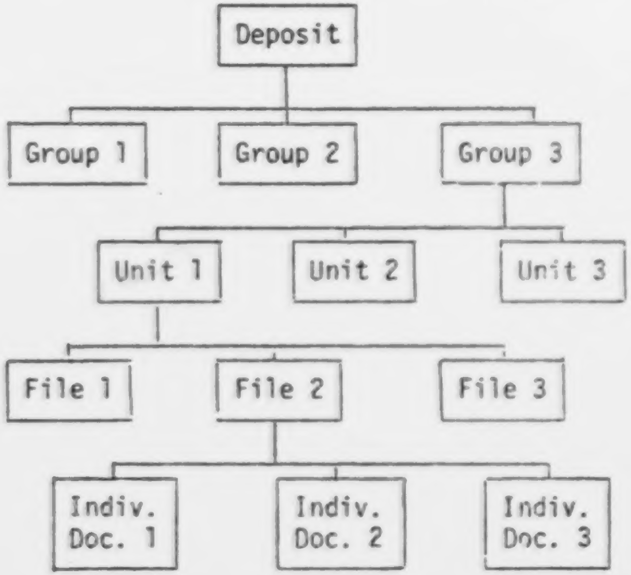
Indexing and classification for documentary purposes, on the other hand, insofar as it is not already accomplished to some extent by the records management classification system in use, is almost always done at the termination of the active life cycle of the records, i.e., when they have become an "archive", sorted and arranged and transferred to the archival repository. The principles of provenance and respect des fonds are maintained both physically, as reflected in the physical arrangement of the material in the repository, and intellectually, in the finding aids created by the archival institution in which the material is deposited, as well as in the classification systems applied there.

In the National Map Collection, descriptive records are created after the arrangement process has been completed. Any documentation created by the archivists in the course of processing, such as inventories, lists, etc. are "translated" into Anglo-American Cataloguing Rules, Second edition (AACR2) format, placed on University of Toronto Library Systems Inc. (UTLAS) coding sheets for conversion into machine-readable form and input into the system.

The most important, and at the same time the most difficult, aspect of this "translation" process is the determination of the "object of description", i.e., the catalogable unit(s). This is so because each one of these units of description becomes a machine-readable record in the system that has to reflect the "object of description" principle as outlined above, and has to maintain the archival context, i.e., provenance and respect des fonds, of the units in relation to each other.

Holmes, in an article in the American Archivist in 1964,[3)] was perhaps the first to attempt outlining schematically operational archival systems. He identified five levels based on five different operations in the processing of archival materials. However, he never connected these "operational" levels either to levels of organisational units or units of arrangement, or to the documentation that would result

Figure 1 LEVELS OF ARRANGEMENT & DOCUMENTATION.


Deposit
Group 1
Group 2
Group 3
Unit 1
Unit 2
Unit 3
File 1
File 2
File 3
Indiv. Doc. 1
Indiv. Doc. 2
Indiv. Doc. 3

Levels of Arrangement (intellectual concept)	Documentation Level	Origin Link
1. Depository Level	Level V	↑ Sub-record - parent record relationship ↓ Parent record - sub-record relationship
2. Group Level	Level IV	
3. Unit Level	Level III	
4. File Level	Level II	
5. Document Level	Level I	

from describing these units.

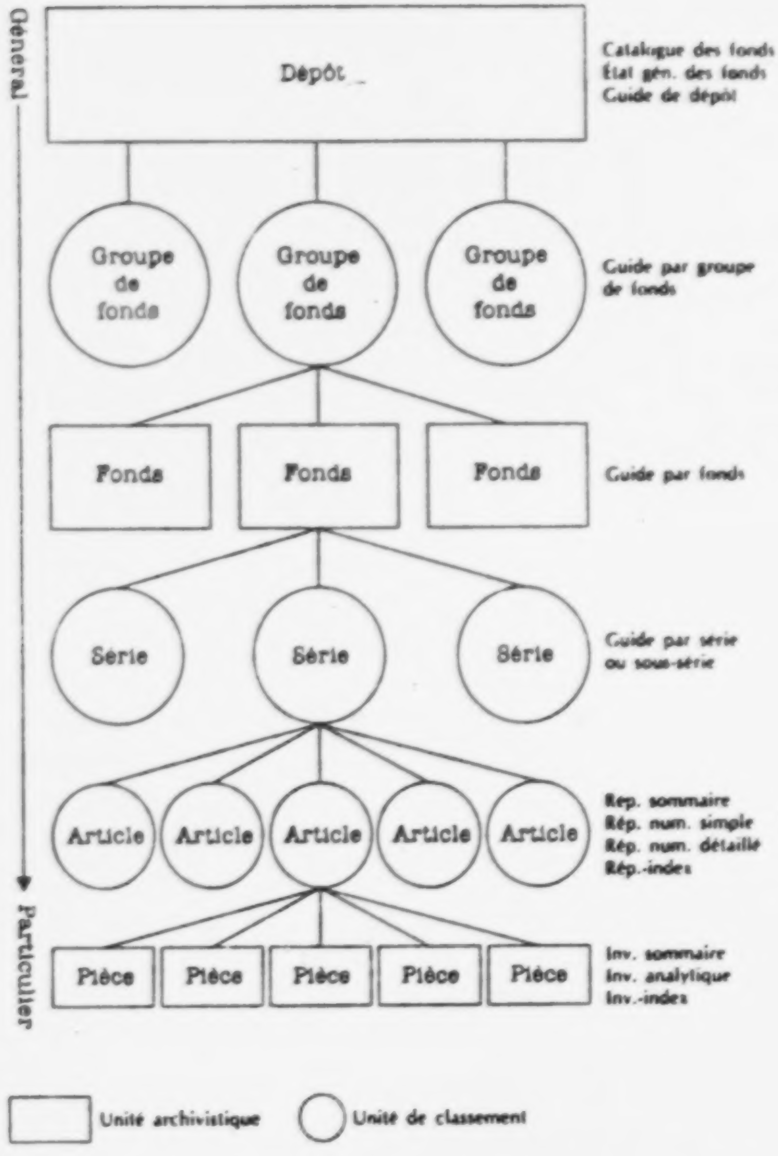
In 1974, in a paper for the archives course of the Public Archives of Canada ambitiously entitled "The National Map Collection's automation project: Documentation philosophy and principles and their application to automated procedures", I presented a diagram that was based on Holmes' five "operational levels" and called it "Levels of arrangement & documentation". It provided the missing link among operations, arrangement and the documentation derived from this arrangement. Figure 1 shows my diagram, and it was on this basis that the National Map Collection proceeded to outline its overall system of archival description.

To my delight, what was decided then fits quite well with the diagram that appeared just last year in *Les instruments de recherche pour les archives* [by] Louis Cardinal *et al.*4), a working group under the auspices of the Association des archivistes du Québec chaired by Victorin Chabot and published by Documentor Inc. as part of a series titled *Accès à l'information administrive*. This diagram (Figure 2) shows the various levels at which documentation is generated; documentation that, according to this publication, cumulatively embodies "les instruments de recherche", i.e., the finding aids of the first order of documentation, for end users. The diagram also shows the hierarchical relationship between organisational units of the material and, in the right-hand column, the consequent hierarchical relationship of the documentation describing these units. By means of circles and rectangular boxes the diagram draws a distinction between organisational units resulting from a classification activity imposed either by the originating institution or the depository institution (circles), and naturally occurring organisational units (rectangles). In the left-hand column it also shows the sequence of detail within the organisational hierarchy, from the general to the specific. It globally and systematically defines the relationships between organisational units (units of arrangement if you like) and its attendant documentation in a much more refined manner than my diagram did.

Although one can argue with the details, it can be used as the basis for determining the "object of description". It also can be used as the basis for determining what constitutes full, medium or global levels of descriptive and, thus, intellectual control over a collection. As such, it can be used to systematize and rationalize the archival documentation process. Descriptions can be generated for any of the six levels shown here. The National Map Collection decided to use only two of these levels for the time being, the "fonds" and the "pièce" or individual item level. Having chosen these two levels does

Figure 2

Instruments de recherche de premier niveau


Général
Particulier
Dépôt
Catalogue des fonds
État gén. des fonds
Guide de dépôt
Groupe de fonds
Groupe de fonds
Groupe de fonds
Guide par groupe de fonds
Fonds
Fonds
Fonds
Guide par fonds
Série
Série
Série
Guide par série ou sous-série
Article
Article
Article
Article
Article
Rep. sommaire
Rép. num. simple
Rép. num. détaillé
Rép.-index
Pièce
Pièce
Pièce
Pièce
Pièce
Inv. sommaire
Inv. analytique
Inv.-index
Unité archivistique
Unité de classement

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not preclude the use of any of the other levels if the need arises. In fact, the examples attached to this paper, discussed below, show three levels. By machine linking the descriptive records to its parent record in the hierarchy, i.e., the record that represents its organisational parent unit, the natural or classed archival context is maintained, including, therefore, the principles of provenance and respect des fonds. Any finding aid produced from these machine linked records therefore also maintains the archival context of the description. It is a matter of display to present the descriptions in a sequence and format that makes this context clear. At the same time these linked records reside on a data base independently so that they can exist side by side with library-type records that do not have these types of linkages established.

The Chabot working group states that the type of finding aids produced under their scheme, such as inventories, guides and lists, are considered "instruments de recherche de premier niveau" i.e., finding aids of the first order. Finding aids of the second order are considered to be those that give detailed access to the contents of collections. Examples of these are indexes, in particular subject, numeric and name indexes, and the descriptions of individual items. The authors state that these types of finding aids do not replace the type of finding aids of the first order, but complement them. Even though not following the overarching principle of the unity of all archival finding aids as laid out in Les instruments de recherche ... ,this is generally the traditional finding aid architecture in use today in most archives. It is a natural outflow of the way these finding aids are made through a long and laborious, often uncoordinated, manual process.

In an automated system the separation of first and second order finding aids is not necessary. It is at the second order of finding aids that the National Map Collection departs from this finding aid architecture. All data elements for which indexes would traditionally be made are designated controlled access points in the machine-readable record and are attached to that record. In fact these access points form an integral part of the machine-readable record. They include names, subject indexing terms and all necessary numeric access points such as accession numbers, box numbers, volume numbers, series numbers, file numbers or whatever other numeric, alphameric or alphanumeric designation the materials or their organisational units may have received either during their creation or as a result of subsequent classification or arrangement activities.

The activity of providing index terms (making an index to a finding aid) is no longer a separate activity from that of description but becomes part of the description activity itself. Subject indexing terms therefore are also part of the descriptive record. Here again the principle of "object description" is crucial and strictly adhered to. Indexing terms are supplied for the object described. If the object described is an entire "fonds" or a summary inventory description, then the indexing terms supplied can only be general terms reflecting what is in the fonds as a whole or pertaining to all materials which the summary inventory represents, and not any particular subdivision of the fonds or inventory. In the traditional archival index, the index points to the material directly. In the system implemented at the National Map Collection, the index points to the descriptive record rather than to the material. In turn, the descriptive record points to the material. In this manner the index is always kept in context to the organization of the material and it is immediately apparent from the record what level of depth (or detail) one is looking at and what the organic relationship is between the record at hand and the other records representing the group as a whole.

An additional advantage of this system is that the number of index entries attached to any particular record can be kept to a minimum as there can only be very few subject terms one can apply to a particular document or group of documents if one cannot go into the contents of the documents in question. Further, since the indexing terms point to the descriptive record, one does not have to repeat in the subject terms what already appears in the description, further limiting the need for elaboration on the topical subject. For example, there is no need to state, in a subject analysis, that these are the papers of so and so since the fact that one is dealing with papers, and the papers of so and so, is already mentioned in the description or expressed in other access points of that description.

With this system of documentation both description and indexing, no matter at which level of arrangement the documentation is generated, is always maintained in its archival context. The subject indexing system is in fact what Richard Lytle has called the Content Indexing, or CI Method, in his two articles on "Intellectual Access to Archives" that appeared in the American Archivist in the spring and winter of 1980.5) The principle of "object description", which maintains the archival context, is what Lytle calls the Provenance or P Method of subject retrieval. He further contends that from the provenance one can deduce a great deal about the subject content of a fonds or collection. As true as that may be, provenance itself cannot be equated to subject. In our system this latter "method" is not a method of subject retrieval at all, but a method to make clear what the provenance is through showing the relationship between the descriptive records in their archival context. Provenance tells something about the natural arrangement that the "archive" has by virtue of its being, when it was created. Equating provenance with subject retrieval confuses the issue.

The subject indexing system we have decided to use in the National Map Collection is PRECIS, an acronym for Preserved Context Indexing System, with its origins in the British Library. It was originally designed to serve as a computerized indexing system to the British National Bibliography (BNB). It is therefore most advantageously used in an automated environment and becomes too labour-intensive if used manually. The "context" in the title of this system (Preserved Context ...) relates to the format and display of the index itself and has nothing to do with the other "context" we have been discussing in this paper, namely the archival context. In our system, as you may recall, the archival context is preserved by the application of the principle of "object description". The PRECIS subject indexing system was chosen because it is, in my opinion, far superior to any other subject indexing systems in use today. It is particularly suited to archives because, unlike subject heading systems, which include thesaural systems, it is not so lexicographic in the sense that once a subject heading is established it starts to function as the target heading, (almost like a dictionary term), for all similar and closely related subjects. Subject heading systems build on precedent and the system therefore quickly outdates itself in its terminology. PRECIS, on the other hand, self-renews by use. There is a constant flow of contemporary terminology infused in the system. The more it is used, the more contemporary it becomes. It is this feature which makes it so attractive for use in archives.

This is not a paper on PRECIS. The technical details can be found in the references listed in note 6 to this paper, if further reading or knowledge is required. I am aware of only one published study done to see how useful PRECIS is for indexing of archival materials. The Public Record Office experimented with PRECIS to index a small section of the list of one class of Prerogative Court of Canterbury probate inventories and a general index of a small sample of files in the class Foreign Office General Correspondence: Political (FO 371), consisting of German and Austrian files for 1945. The results were reported in an article in the Journal of the Society of Archivists in April 1981.[7]

In both projects limited use was made of the cross-reference facility of PRECIS. The major critiques levelled at PRECIS for indexing of this type of materials was "that it offered only partial help with the intellectual aspects of indexing" and that "the very comprehensiveness of index entries in PRECIS, deriving from the concept of context dependency, made it unsuitable for indexing disparate aspects of the subject or the administrative, personal or topographical associations of a document or list description." These disadvantages are precisely derived from the lack of applying the principle of "object description" and trying to use PRECIS as an index to the materials directly, rather than to the descriptive records for that material. In other words, the pointers of the index bypassed the description and pointed directly to the material itself. It is in the descriptive record that the archival context is recorded. The "administrative, personal or topographical associations of a document" ,therefore, are lost. In our system the index entries are part and parcel of the descriptive record and therefore point to that record when stripped from it in order to produce an index. The archival context is never lost.

The results of the National Map Collection Pilot Project, using the University of Toronto Automated Library System (UTLAS) together with the concepts and principles as outlined above and the Anglo-American Cataloguing Rules Second edition (1978).

Allow me to show you the results of our experimentation. Since this is a Pilot Project, the volume of records involved is small. We used a test data base of 300 machine-readable descriptive records that included both library type records (the majority), and selected records for a record group of cartographical materials. Associated with these descriptive records are approximately 2000 "authority records". These authority records represent the controlled access points to the descriptive records. They reside on the data base as separate machine-readable records linked to the descriptive records. The authority record system is in fact a subsystem of the descriptive record system. This type of system architecture is common to most bibliographic data base systems in use in North America, e.g., UTLAS, OCLC, the Library of Congress system, and it ensures data consistency, prevention of data entry errors through re-keying of similar information, and prevention of redundancy of data in the system.

The desriptive records are in *Anglo-American Cataloguing Rules*, Second edition form, and are converted to machine-readable form using the MARC format. The *Anglo-American Cataloguing Rules*, as interpreted by the Hensen document (1983),[8] were used for entry and description of all the records that describe the materials in the record group, and the remainder of the descriptions (those for single cartographic items) as interpreted by the publication[9] *Cartographic materials : A manual of interpretation for AACR2* (1982). The work of the Association of American Archivists' National Information Systems Task Force on the MARC format for archives has been invaluable. The MARC format was enhanced with all the necessary data fields for archives as a result. Since UTLAS supports both the American and Canadian national MARC formats, the added fields are available to us and we are, of course making use of them. Here is a message for the archival community. These additional archival fields are not currently available in all national MARC formats. (They are not available in the Canadian national MARC format). They will not be available unless the archival community, through a responsible body, requests these enhancements.

Figures 3 to 6 inclusive show selected machine-readable records for Record Group 2M (RG 2M). Unfortunately, it is not possible to show within a paper of this kind all the records in the test data base that represent the record group we selected for the test on UTLAS. Also, I assume that everybody present here is familiar with library-type records. Such records will, therefore, not be shown. Except for the shelf list, the products we have specified from UTLAS are all on Computer Output Microfiche (COM). It is difficult to reproduce these. I had to re-type the records for presentation in this paper and on the overhead projector. I have done it in exactly the same style and lay-out as these records appear on the COM product. To assure you that I am showing real examples and not fictitious ones, Figure 3-1 through to 3-7 shows the computer print-out of all the records used. It shows each record (one per page) as it resides on the data base, fully coded, and with no information left out. For those of you who are familiar with the MARC format, these records should not give you any problems. You should be able to "read" them quite easily.

This is not the place or the time to go into great detail regarding the MARC format. There are only a few things I will draw to your attention. The fields ,(or tags as they are often referred to), marked with an asterisk are user specific fields. Therefore, fields U035, 090, and 792 contain information that is National Map Collection local information. Field U035 is the NMC accession number, field 090 is the NMC classification and call number, and field 792 is the all important linking field. It links a record to a related record. We use this field to link sub-records to their parent record. The field contains the Record Sequence Number (RSN) of the parent record. You will note that the first record (Figure 3-1) does not have a 792 field. Its RSN is 9285029. You will find that RSN in all records linked to it in their 792 fields. If you look in Figure 3-2 through 3-5 inclusive, each record displayed there has an 792 field with the 9285029 number in it. The record displayed in Figure 3-5 is itself a parent record. Its RSN is 92850226. You find this RSN in the 792 field of the records displayed in Figures 3-6 and 3-7. These last two records are, therefore, third level records.

This procedure makes it possible to keep the records in their archival context by displaying them in relation to their parent record that, in turn, represents its next hierarchical arrangement unit up. I say "up", not down. Pointers are only pointing to the record that represents the arrangement unit that it is itself a part of. There is no need to point downward. There simply woud not be enough space to carry all record pointers in a record that represents many items.

Another field to note is the 690 field. This field is repeatable. The information in this field looks strange because of all the seemingly unrelated terms and phrases that appear here, together with a lot of coding. Each occurrence of this field carries a PRECIS indexing string together with the necessary coding for manipulating the string in order to produce multiple access points and to keep these strings in context at all times through a shunting process. These strange looking pieces of text produce a quite intelligible subject index as will be seen later.

And finally I like to draw your attention to the information that appears at a number of places in the record between double parentheses. Within these parentheses you will see "ASN=", followed by a number, followed by a $w and some more coding. The information preceding this ASN number, within the double parentheses, is subject to authority control. The ASN is the Authority Sequence Number of the authority record in question. Generally, you will note that all names, personal, corporate and names of conferences, are subject to authority control. In addition, all PRECIS strings are under authority control. All of these are controlled access points.

Figure 4 is an actual product on COM that the end user would use. It is called SERIES because this product also carries all records that are a published series, such as, for example, all sheets of a tpographic series. Only the sample record group records are shown here. It is sorted by the classification and call number. As you can see, it sorts itself out quite nicely in its hierarchical archival context. The first record is the record that represents the "fonds". Subsequent records shown represent parts of that "fonds". The indentation pattern shows which items belong to which part of the preceding displayed record. Three levels are shown.

This product is similar to two other products that we have specified. The shelf list on COM and the shelf list on cards. These are also sorted on the classification and call number but include, at the bottom of each record, the PRECIS strings. The shelf list is a complete descriptive record. Shelf lists are internal tools, for control of call numbers, and are not available to researchers.

Figure 5 is not a product. It shows all the PRECIS strings that are generated from the seven records we are showing here (Figure 3-1 through 3-7). This then is a mini-subject-index to these seven records and are automatically generated from the information contained in the 690 fields in the machine-readable records. All PRECIS index displays consist of two-line strings. The context in PRECIS is provided by the second line. The leading term, sometimes consisting of more than one word, is in bold face or, in this case, capitalized. Terms after a dash are usually in italics.

Indexes index something. Each string, heading, or whatever you want to call it, has to point to what it indexes. As I have stated before in this paper, in the traditional indexes to archival descriptions I have seen, the index points to the material. In our system, the index points to the descriptive record. To reinforce this fact, part of the record is repeated directly under each index string. In our subject index it is immediately apparent what the index terms in the string refer to. Figure 6 shows the first nine index strings in their descriptive record context. Included in the record is the necessary information needed to look up the archival context of the record. The call number can be used to refer back to the series product where the archival context of the record can be determined.

There are more products we have specified. The main product, carrying the full descriptive records, is what archivists tend to call the name index. It is, of course, the main entry catalogue. In accordance with the Hensen document, that in effect is the manual of interpretation of AACR2 for archival materials, the main entry is the name of the person or corporate body that constitutes the provenance of the materials described. However, when describing at the lowest level, that of the individual item, or small group of items, the name of the creator of the document automatically becomes the main entry. The main entry catalogue, therefore, is a catalogue "by provenance" or "collector" in some cases, but also includes all names of "authors". It truly is, therefore, the equivalent of what archivists call the name index. Where there is no name associated with the material described, it is entered under title.

In addition to this product, we have specified a number of diagnostic products for internal control purposes, such as the PRECIS shunt product that we use for detecting any errors in the shunting of the subject PRECIS strings.

Conclusion

At the National Map Collection, we have demonstrated that a computer system primarily designed for the processing of library-type bibliographic records can be successfully used for the processing of archival documentation without losing the all important archival principles of provenance and respect des fonds and without a great deal of adaptation. In other words, the current systems can be used as they exist.

From our experience, we found that there are conditions attached to the successful implementation of such a system. Firstly, a systematic well documented system of archival description is essential. One cannot successfully automate archival descriptive systems with vaguely defined concepts. That would be a recipe for disaster. Further, one does not define formats for conversion to machine-readable form before one knows what one wishes to put in such a format. To know what is to be put in a format, data elements have to be defined. It helps to also know how stable or volatile these data elements are going to be. To obtain consistency in the description of archival collections it would be nice, although lately I have come to believe not absolutely essential, to have rules of description for archival materials similar to the Anglo-American Cataloguing Rules. It would make life so much easier! These cannot ever be developed, however, without standards for general archival descriptive systems.

Finally, a great deal of discipline is required, both to obtain consistency of treatment of descriptive information from collection to collection and record to record, and throughout an institution, if the institution is going to make use of the same computer system. Proliferation of systems run on the same machine would not be economical in the long run and therefore not justifiable. Expenditures of great sums of money would eventually result with very little to show for it.

Archivists do not have a tradition in this sort of discipline. There is a great deal of work to be done. It is my hope that the professional archival community in this world can come up with the will to get that job done in order to make the material in archives better accessible through automation.

NOTES

1. Provenance and respect des fonds are basic archival principles that have to be respected both in the physical arrangement of the materials and in their description.

   In general manuscript and archival usage the term provenance means "office of origin" of records, i.e., that office or administrative entity that created or received and accumulated the records in the conduct of its business. Also, in theory, the principle that archives of a given record creator must not be intermingled with those of other records creators.

   A "fonds" is simply an assemblage of records created or received and accumulated by a corporate body, an office or administrative entity within a corporate body, or indeed by an individual person. Respect des fonds, therefore means that the physical and intellectual organisation of the records themselves have to reflect the structure of the organisation and must be maintained in that order. Since structures of organisations are almost always hierarchical, it follows that the units in which the records are to be organised also have a hierarchical structure. Where a number of organisational units exist a the same level, e.g., a branch with ten divisions, the divisions being all at the same hierarchical level, archivists often organise the records created and accumulated at such a level in an archival series, each divisional "fonds" being one member of that series.

2. The international standards promulgated by the library community either implicitly or explicitly state that principle. In the Paris Principles, most ISBD's and AACR1 the concept that the description of a work is created for the work in hand is implicit from the rules that prescribe the source for the information to be recorded and the rules that regulate the transcription of the information from the designated sources. The closest the General International Standard Bibliographic Description: Annotated Text (ISBD(G)) comes to promulgating this principle explicitly is in "0.2 Definitions" where the term "item" is defined as "... a document, group of documents, or part of a document, ... considered as an entity and forming the basis of a single bibliographic description..." (underlining is mine). AACR1 does not state this principle explicitly at all. AACR2 is more clear and is the only standard that states the principle explicitly as follows: "... the starting point for description is ... the item in hand ..." (Introduction, 024, p. 8)

3. Holmes, Oliver W. "Archival arrangement - five different operations at five different levels", American Archivist, 27 January 1964. pp. 21-41.

4. Cardinal, Louis et al. Les instruments de recherche pour les archives. Group de travail sous la direction de Victorin Chabot. Collection Accès à l'information administrative. La Pocatière: Documentor, 1984. p. 20.

5. Lytle, Richard H. "Intellectual access to archives : I. Provenance and content indexing methods of subject retrieval" American Archivist 43 (winter 1980). pp. 64-75.

   Lytle, Richard H. "Intellectual access to archives : II. Report of an experiment comparing provenance and content indexing methods or subject retrieval" American Archivist 43 (spring 1980). pp. 191-206.

6. The following works are a must for the use and further study of PRECIS:

   a) Austin, Derek. PRECIS : A manual of concept analysis and subject indexing. Second edition. London: The British Library, Bibliographic Services Division, 1984. 397 p.

   b) Austin, Derek. PRECIS : A manual of concept analysis and subject indexing. [First edition]. London: The Council of the British National Bibliography, Ltd, 1974. 551 p.

   c) Ramsden, Michael J. PRECIS : A workbook for students of librarianship. Outlines of Modern Librarianship. London: Clive Bingley, 1981. 152 p.

   d) Richmond, Phyllis A. Introduction to PRECIS for North American usage. Littleton, Col.: Libraries Unlimited, 1981. 321 p.

   e) Wellisch, Hans H. (Ed.) The PRECIS index system : Principles, applications and prospects. Proceedings of the international PRECIS workshop sponsored by the College of Library and Information Services of the University of Maryland October 15-17, 1976. New York: The H.W. Wilson Company, 1977. 211 p.

7. Chalmers, Duncan "Computer indexing in the Public Record Office" Journal of the Society of Archivists, April 1981:6(7), pp. 399-413.

8. Hensen, Steven L. Archives, personal papers, and manuscripts : A cataloging manual for archival repositories, historical societies, and manuscript libraries. Washington, D.C.: Manuscript Division, Library of Congress, 1983. 51 p.
This document represents the interpretation of the Anglo-American Cataloguing Rules, Second edition for archival materials.

9. Cartographic materials : A manual of interpretation for AACR2 prepared by the Anglo-American Cataloguing Committee for Cartographic Materials. Hugo L.P. Stibbe, General editor, Vivien Cartmell and Velma Parker, editors. Chicago, Ottawa, London: American Library Association, Canadian Library Association, The Library Association, 1982. 258 p.

Figure 3-1

```
cess key: 92850219
   FSN     FIC  CFM     DFC      DCR      DCH     TCH  LNG
 92850219 updt NMC  75Jan00 84Dec07 84Dec10 11:46 eng
TATUS      fin
ymore?
:n
   FSN     FIC  CFM     DFC      DCR      DCH     TCH  LNG
 92850219 updt NMC  75Jan00 84Dec07 84Dec10 11:46 eng
ATUS       in
                        01:841207 02:       m 03:  1884 04:  1906 05:    cn
                        17:   eng 19:       c 30:      c 31:      f 32:     1
                        33:     a 90:       a
034       0....... 0001 $aa
u035      1....... 0001 $a78903/81
039       8....... 0001 $a0$b3$c3$d3$e2
u040      ........ 0001 $aCOAMA$beng
048       ........ 0001 $an-cn---
055       .3...... 0001 $aG 3400$b1884 ***
090       0....... 0001 .841207$aRG 2M/78903\81/D333-/D432/$rSee note for other
                        locations
090       0....... 0002 .841207$aG/3400/1884/***
110       1.....0. 0001 $aCanada.$bPrivy Council Office((ASN=29504161$w2c))
245       00...... 0001 $aRecords, accession 78903/81, 1884-1906. --
500       ........ 0001 $a1833 items.
500       ........ 0001 $aConsists of oversized maps and plans associated with
                        the Orders-in-Council generated by the Privy Council
                        Office, 1884-1906.  Relates chiefly to railways (right-of
                        way plans, profiles and bridge plans).  Other plans
                        relate to mining, water power develcpment, Indian
                        reserves, drill halls, etc.
500       .... ... 0002 $aRecords arranged chronologically by Privy Council order
                        no.
500       ........ 0003 $aTransfered from Federal Archives Division, Public
                        Archives of Canada, Feb. 1979.
500       ........ 0004 $aNo restrictions.
500       ........ 0005 $aDetailed finding aid available; contains references to
                        previously transfered material located in the main
                        collection.  Also indexed by building type.
500       ........ 0006 $aLocations: 31 12,32; H11/210/Miramichi R./1823; F/509
                        1892; F/607-1895 (1900); H3/740-(Lake) Laberge (I.R.)-
                        1901.
710       10....0. 0001 $aCanada.$bBureau du Conseil priv[a]e((ASN=30254185$w2c))
vmore?
```

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Figure 3-2

```
cess key: 92850223
  RSN     RTC  CFN    DFC     DCR     DCH     TCH  LNG
 92850223 updt NMC  75Jan00 84Dec07 84Dec10 11:19 eng
!ATLS     f n
ymore?
isp
  RSN     RTC  CFN    DFC     DCR     DCH     TCH  LNG
 92850223 updt NMC  75Jan00 84Dec07 84Dec10 11:19 eng
!ATLS     f.n
                        01:841207 02:     s 03:  1867 05:   cn  17:   eng
                        19:       c 30:   a 31:     f 32:     0 33:     a
                        34:       1
034     1....... 0001 $aa$b31680
*035    2....... 0001 $a78903/81
039     2....... 0001 $a1$b3$c3$d3$e2
040     ........ 0001 $aCOAMA$beng
043     ........ 0001 $an-cn-on$an-cn-qu
055     ........ 0001 $aG 3461 .F7$b1867 ***
*090    0....... 0001 .841207$aRG 2M/78903\81/D333/F1/#1-4
*090    0....... 0002 .841207$aG/3461/.F7/1867/***
245     10...... 0001 $aPlan of the River Ottawa from the mouth of the River
                      Mattawan to Point Fortune ... exhibiting the line
                      boundary between Upper and Lower Canada ... --
255     ........ 0001 $aScale [1:31 680].  40 chs. to 1 in. --
260     1....... 0001 $a$c1867. --
300     ........ 0001 $a1 map on 4 sheets :$bms., col., on tracing linen.
500     ........ 0001 $a"Department of Crown Lands, Ottawa 29 June 1867. A.
                      Campbell, Commissioner."  Reduced from the maps of the
                      Ottawa Ship Canal Survey, deposited in the Dept. of
                      Public Works, from other documents in the Dept. of Crown
                      Lands.
500     ........ 0002 $a"Sd.  Joseph Bouchette, D.I.S."
500     ........ 0003 $a"E.E. Tach[a]e, P.L.S. draughtsman S.E."
505     0....... 0001 $a1. From mouth of Mattawan to foot of Deep River -- 2.
                      From foot of Deep River to Calumet falls -- 3. From
                      Calumet to the Chats Falls -- 4. From Chats to Point
                      Fortune (incomplete).
690     ........ 0001 $a$x11030$dUpper Canada$y21030$aboundaries$vwith$y10030
                      $dLower Canada along the the Ottawa River$x11030$dLower
                      Canada$y21030$aboundaries$vwith$y10030$dUpper Canada
                      along the Ottawa River$x10030$dOntario & Quebec$yp1030
                      $dOttawa River$y20030$aboundary between Upper & Lower
                      Canada$z60030$amanuscript maps((ASN=92700721))
700     10....0. 0001 $aBouchette, Joseph,$d1774-1841((ASN=29566909$w2c))
700     10....0. 0002 $aTach[a]e, Eug'ene E.,$d1836-1912((ASN=29536675$w2b))
710     10....0. 0001 $aCanada.$bCrown Lands Dept.((ASN=296398854$w2c))
792     ........ 0001 $a92850219
ymore?
```

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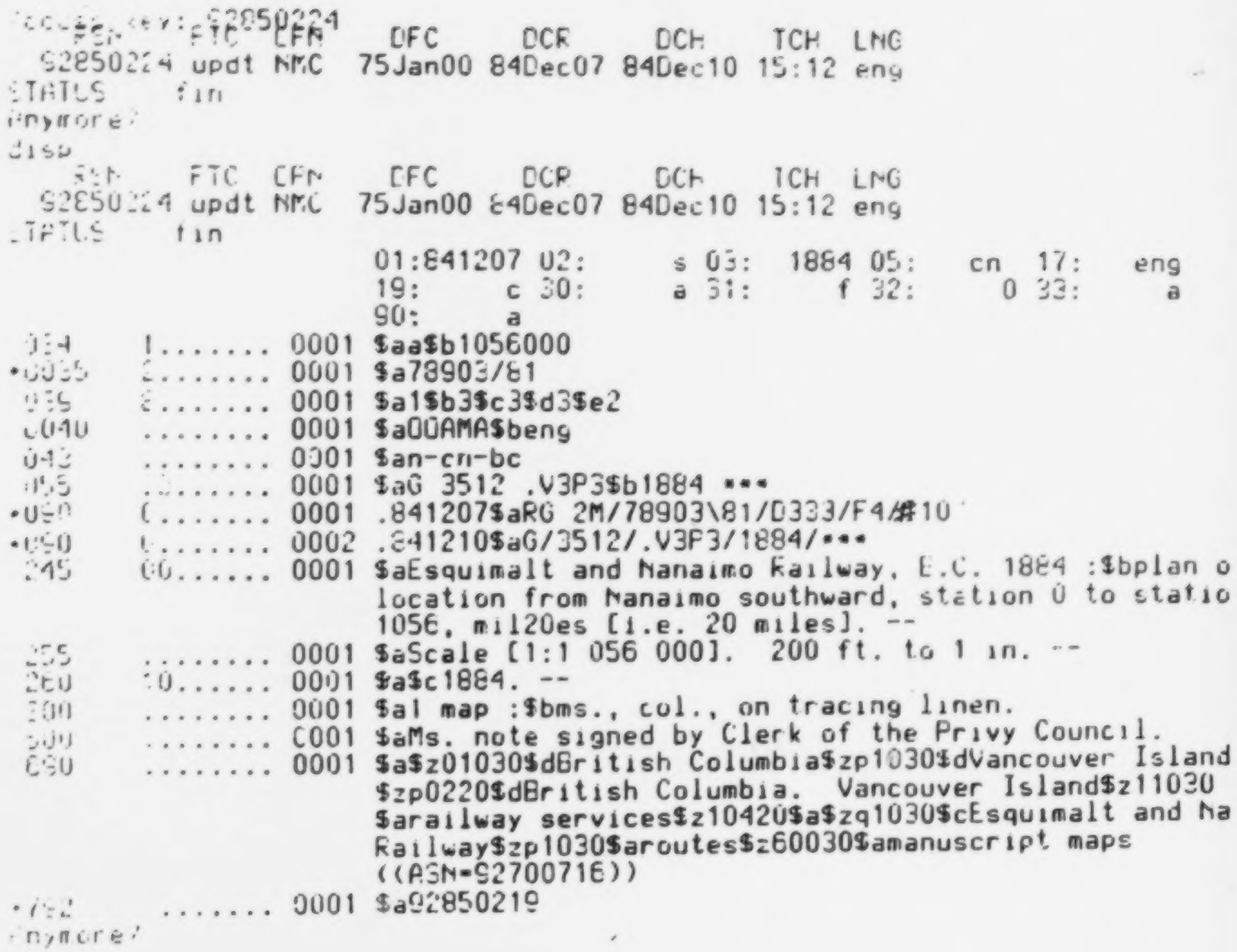
Figure 3-3



```
Record key: S2850224
   RSN    FTC  CFM    DFC     DCR     DCH    TCH  LNG
  S2850224 updt NMC  75Jan00 84Dec07 84Dec10 15:12 eng
STATUS     fin
Anymore?
disp
   RSN    FTC  CFM    DFC     DCR     DCH    TCH  LNG
  S2850224 updt NMC  75Jan00 84Dec07 84Dec10 15:12 eng
STATUS     fin
                        01:841207 02:      s 03:  1884 05:   cn  17:   eng
                        19:     c 30:      a 31:     f 32:     0 33:     a
                        90:     a
 034     1....... 0001 $aa$b1056000
•0035    2....... 0001 $a78903/81
 036     3....... 0001 $a1$b3$c3$d3$e2
 0040     ........ 0001 $a00AMA$beng
 043      ........ 0001 $an-cn-bc
 055      ........ 0001 $aG 3512 .V3P3$b1884 ***
•090     0....... 0001 .841207$aRG 2M/78903\81/D333/F4/#10
•090     0....... 0002 .841210$aG/3512/.V3P3/1884/***
 245     00...... 0001 $aEsquimalt and Nanaimo Railway, B.C. 1884 :$bplan o
                       location from Nanaimo southward, station 0 to statio
                       1056, mil20es [i.e. 20 miles]. --
 255      ........ 0001 $aScale [1:1 056 000].  200 ft. to 1 in. --
 260     10...... 0001 $a$c1884. --
 300      ........ 0001 $a1 map :$bms., col., on tracing linen.
 500      ........ C001 $aMs. note signed by Clerk of the Privy Council.
 690      ........ 0001 $a$z01030$dBritish Columbia$zp1030$dVancouver Island
                       $zp0220$dBritish Columbia.  Vancouver Island$z11030
                       $arailway services$z10420$a$zq1030$cEsquimalt and Na
                       Railway$zp1030$aroutes$z60030$amanuscript maps
                       ((ASN=S2700716))
•792      ....... 0001 $a92850219
Anymore?
```

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Figure 3

[illegible]

```
Access key: 92850225
   RSN    FTC  CPN     DFC      DCR      DCH     TCH  LNG
  92850225 updt NMC  75Jan00 84Dec07 84Dec10 11:22 eng
STATUS     fin
Anymore?
disp
   RSN    FTC  CPN     DFC      DCR      DCH     TCH  LNG
  92850225 updt NMC  75Jan00 84Dec07 84Dec10 11:22 eng
STATUS     fin
                           01:841207 02:      s 03:  1886 05:   cn  17:   eng
                           19:       c 20:    a 31:     f 32:     0 33:     a
                           34:       1 90:    a 91:     e
 034      1........ 0001 $aa$b2400
•L035     2........ 0001 $a78903/81
 039      8........ 0001 $a1$b2$c3$d3$e2
 L040     ......... 0001 $aOCAMA$beng
 043      ......... 0001 $an-cn-on
 055      .2....... 0001 $aG 3462 .N52P2$b1886/***
•090      0........ 0001 .841207$aRG 2M/78903\81/D339/F6/#139
•090      0........ 0002 .841207$aG/3462/.N52P2/1886/***
 245      00....... 0001 $aPlan showing propcsed carriage road from Niagara Fal
                         ferry to suspn. bridge on Canandian side of river
                         skirting water edge. --
 255      ......... 0001 $aScale [1:2 400]. --
 260      1........ 0001 $á$c[ca. 1886]. --
 300      ......... 0001 $a1 map :$bms., col.
 500      ......... 0001 $aSigned D. Stewart Noble, C.E.
 500      ......... 0002 $aNorth oriented to right.
 650      ......... 0001 $a$z01030$dOntario$zp1030$dNiagara Falls region$zp0220
                         $dOntario.  Niagara Falls region$z11030$aroads$zp1030
                         $aroutes$z61030$aproposals$z60030$amanuscript maps
                         ((ASN=92700722))
 700      10....... 0001 $aNoble, D. Stewart
•792      ......... 0001 $a92850219
Anymore?
```

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Figure 3-5

```
cess key:-92850228
  RSN  RTC  CPN    DFC     DCR     DCH     TCH      SNR     LNG
 92850228 updt NMC  75Jan00 84Dec10 84Dec10 15:09  92850226 eng
IRIUS    fin
 vmore?
 :p
  RSN   RTC  CPN    DFC     DCR     DCH     TCH      SNR     LNG
 92850228 updt NMC  75Jan00 84Dec10 84Dec10 15:09  92850226 eng
 ATUS    f:n
                          01:841210 02:     s 03:  1871 05:   cn  17:    eng
                          19:     c 30:     a 31:     f 32:     0 33:      a
                          34:     1 90:     a
 034     0....... 0001 $aa$b380160
*0025    2....... 0001 $a78903/81
 039     0....... 0001 $a1$b2$c3$d3$e2
 0040    ........ 0001 $aDGAMA$beng
 043     ........ 0001 $an-cn-bc
 055     .3...... 0001 $aG 3511 .H66$b1871/***
*090     0....... 0001 .841210$aRG 2M/78903\81/D432/F6/$1817
*090     0....... 0002 .841210$aG/3511/.H66/1871/***
 245     00...... 0001 $aPlan no. 17: Town of Hope on Fraser River showing
                       government reserves and buildings in red. --
 255     ........ 0001 $aScale [1:380 160].  6 in. to 1 mile. --
 260     1....... 0001 $a$c1871. --
 300     ........ 0001 $a1 map :$bms., col., on tracing linen.
 500     ........ 0001 $aSigned by Henry Holbrook.
 500     ........ 0002 $a"Minister of Public Works".
 690     ........ 0001 $a$z11030$dBritish Columbia$zp1030$dHope$zp0220$dBritish
                       Columbia.  Hope$z11030$agovernment property$z60030
                       $amanuscript maps((ASN-92700713))
 792     ........ 0001 $a92850226
 vmore?
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Figure 3-6

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seek key: S2850226
  RSN     FTC  CPN    DFC      DCR      DCH     TCH  LNG
 S2850226 updt NMC  75Jan00 84Dec10 84Dec10 10:12 eng
ATUS      fin
ymore?
isp
  RSN     FTC  CPN    DFC      DCR      DCH     TCH  LNG
 S2850226 updt NMC  75Jan00 84Dec10 84Dec10 10:12 eng
ATUS      fin
                          01:841210 02:      m 03:  1861 04:  1871 05:   cn
                          17:   eng 19:      c 30:     a 31:     f 32:     1
                          33:     a 34:     -1 90:     a
 034     0....... 0001 $aa
*U035    2....... 0001 $a78903/81
 039     0....... 0001 $a0$b2$c3$d3$e2
*U040    ........ 0001 $aOOAMA$beng
 043     ........ 0001 $an-cn-bc
 055     .3...... 0001 $aG 3511 .G46$b1861/***
*090     0....... 0001 .841210$aRG 2M/78903\81/D432/F6/#1800-/#1833
*090     0....... 0002 .841210$aG/3511/.G46/1861/***
 245     00...... 0001 $a[Portfolio of plans of government reserves and
                       buildings in British Columbia, 1861-1871]. --
 300     ........ 0001 $a31 maps and architectural plans :$bmost ms., most col.
                       most on tracing linen.
 500     ........ 0001 $aAccompanied by: Descriptive schedule of plans of goven
                       reserves, ground plans and plans of govent. buildings in
                       the Province of British Columbia.  ms.  [3] p.
 500     ........ 0002 $aMost have signature "Henry Holbrook,  Minister of
                       Public Works".
 690     ........ 0001 $a$z01030$dBritish Columbia$x11030$agovernment land$y600
                       $amanuscript maps$x11030$agovernment buildings$y61030
                       $aarchitectural drawings((ASN-92700717))
 792     ........ 0001 $a92850219
ymore?
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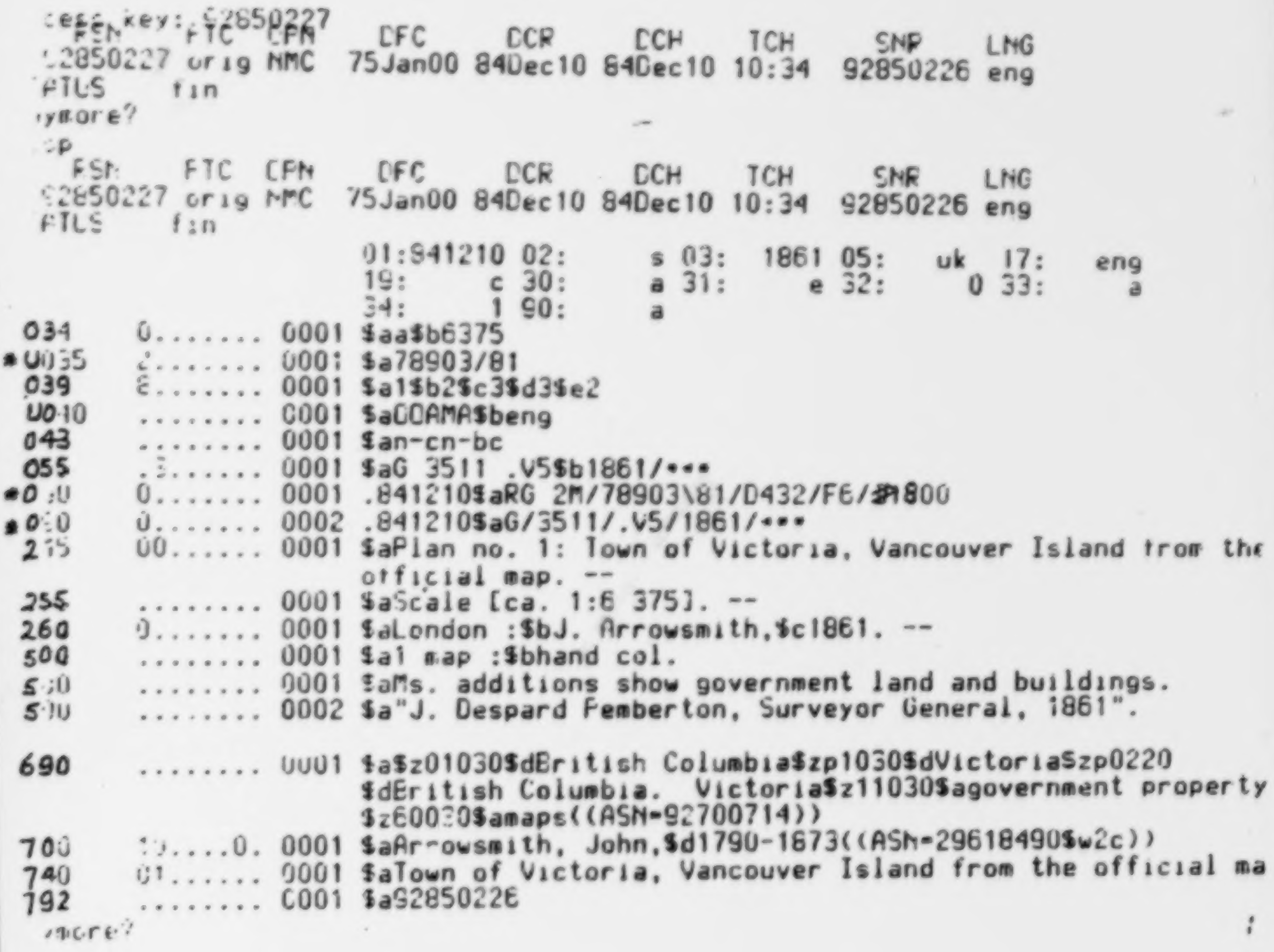
Figure 3-7



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FTLS     fin
ymore?
 p
  FSN     FTC  CPN    DFC      DCR      DCH      TCH      SNR     LNG
92850227 orig NMC  75Jan00 84Dec10 84Dec10 10:34  92850226 eng
FTLS     fin
                         01:941210 02:      s 03:  1861 05:   uk  17:    eng
                         19:     c 30:      a 31:     e 32:      0 33:     a
                         34:     1 90:      a
 034     0....... 0001 $aa$b6375
*U035    2....... 0001 $a78903/81
 039     8....... 0001 $a1$b2$c3$d3$e2
 U040    ........ 0001 $aDOAMA$beng
 043     ........ 0001 $an-cn-bc
 055     .3...... 0001 $aG 3511 .V5$b1861/***
*0:0     0....... 0001 .841210$aRG 2M/78903\81/D432/F6/#1800
*0:0     0....... 0002 .841210$aG/3511/.V5/1861/***
 245     00...... 0001 $aPlan no. 1: Town of Victoria, Vancouver Island from the
                       official map. --
 255     ........ 0001 $aScale [ca. 1:6 375]. --
 260     0....... 0001 $aLondon :$bJ. Arrowsmith,$c1861. --
 500     ........ 0001 $a1 map :$bhand col.
 5:0     ........ 0001 $aMs. additions show government land and buildings.
 5:0     ........ 0002 $a"J. Despard Pemberton, Surveyor General, 1861".

 690     ........ U001 $a$z01030$dBritish Columbia$zp1030$dVictoria$zp0220
                       $dBritish Columbia.  Victoria$z11030$agovernment property
                       $z60030$amaps((ASN=92700714))
 700     10....0. 0001 $aArrowsmith, John,$d1790-1673((ASN=29618490$w2c))
 740     01...... 0001 $aTown of Victoria, Vancouver Island from the official ma
 792     ........ C001 $a92850226
 more?
```

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Figure 4

SERIES

RG 2M 78903/81 D333-D432
(See note for other locations)
Canada. Privy Council Office
Records, accession 78903/81, 1884-1906.
1833 items.
Consists of oversized maps and plans associated with the Orders-in-Council generated by the Privy Council Office, 1884-1906. Relates chiefly to railways (right-of-way plans, profiles and bridge plans). Other plans relate to mining, water power development, Indian reserves, drill halls, etc.
Records arranged chronologically by Privy Council order no.
Transferred from Federal Archives Division, Public Archives of Canada, Feb. 1979.
No restrictions.
Detailed finding aid available; contains references to previously transfered material located in the main collection. Also indexed by building type.
Locations: ST 12,32; H11/210/Miramichi R./1823; P/500-1901.
I. Canada. Bureau du Conseil privé
G 3400 1884 *** (92850219)

RG 2M 78903/81 D333 P1 #1-4
Plan of the River Ottawa from the mouth of the River Mattawan to Point Fortune ... exhibiting the line boundary between Upper and Lower Canada. — Scale [1:31 680]. 40 chs. to 1 in. —1867.
1 map on 4 sheets : ms., col., on tracing linen.
"Department of Crown Lands, Ottawa, 29 June 1867, A. Campbell, Commissioner." Reduced from the maps of the Ottawa Ship Canal Survey, deposited in the Dept. of Public Works, from other documents in the Dept. of Crown Lands.
"Sd. Joseph Bouchette, D.I.S."
"E.E. Tache, P.L.S. draughtsman S.E."
1. From mouth of Mattawan to foot of Deep River — 2. From foot of Deep River to Calumet falls — 3. From Calumet to the Chats Falls — 4. From Chats to Point Fortune (incomplete).
I. Bouchette, Joseph, 1774-1841 II. Taché, Eugène E., 1836-1912 III. Canada. Crown Lands Dept.
G 3512 .F7 1867 *** (92850223)

RG 2M 78903/81 D333 P4 #10
Esquimalt and Nainamo Railway, B.C. 1884 : plan of location from Nanaimo southward, station 0 to station 1056, mil20es [i.e. 20 miles]. — Scale [1:1 056 000]. 200 ft. to 1 in. — 1884.
1 map : ms., col., on tracing linen.
Ms. note signed by Clerk of the Privy Council.
Order in Council 1996 approved 21 October 1884.
G 3512 .V3P3 1884 *** (92850224)

RG 2M 78903/81 D339 P6 #139
Plan showing proposed carriage road from Niagara Falls ferry to suspn. bridge on Canadian side of river skirting water edge. — Scale [1:2 400]. — [ca. 1886].
1 map : ms., col.
Signed D. Stewart Noble, C.E.
North oriented to right.
Order in Council 1091 approved 5 June 1886.
I. Noble, D. Stewart
G 3462 .N52P2 1886 *** (92850225)

RG 2M 78903/81 D432 P6
[Portfolio of plans of government reserves and buildings in British Columbia, 1861-1871].
31 maps and architectural plans : most ms., most col., most on tracing linen.
Items 1800-1833
Accompanied by: Descriptive schedule of plans of govmnt reserves, ground plans and plans of govmnt. buildings in the Province of British Columbia. ms. [3] p.
Most have signature "Henry Holbrook. Minister of Public Works".
G 3511 .G46 1861 *** (92850226)

RG 2M 78903/81 D432 P6 #1800
Plan no. 1: Town of Victoria, Vancouver Island from the official map. — Scale [ca. 1:6 375]. — London : J. Arrowsmith, 1861.
1 map : hand col.
Ms. additions show government land and buildings.
"J. Despard Pemberton, Surveyor General, 1861".
I. Title: Town of Victoria, Vancouver Island from official map II. Arrowsmith, John, 1790-1873
G 3511 .V5 1861 *** (92850227)

RG 2M 78903/81 D432 P6 #1817
Plan no. 17: Town of Hope on Fraser River showing government reserves and buildings in red. — Scale [1:380 160]. 6 in. to 1 mile. — 1871.
1 map : ms., col., on tracing linen.
Signed by Henry Holbrook.
"Minister of Public Works".
G 3511 .H66 1871 *** (92850228)

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Figure 5

SUBJECT INDEX

ARCHITECTURAL DRAWINGS
    British Columbia. Government building

BOUNDARIES. Lower Canada
    With Upper Canada along the Ottawa River-Manuscript maps

BOUNDARIES. Upper Canada
    With Lower Canada along the Ottawa River-Manuscript maps

BRITISH COLUMBIA
    Government buildings-Architectural drawings

    Government land-Manuscript maps

    Hope. Government property-Manuscript maps

    Vancouver Island. Railway services: Esquimalt and Nanaimo Railway.
        Routes-Manuscript maps

    Victoria. Government property-Maps

ESQUIMALT AND NANAIMO RAILWAY
    Routes-Manuscript maps

GOVERNMENT BUILDINGS. British Columbia
    -Architectural drawings

GOVERNMENT LAND. British Columbia
    -Manuscript maps

GOVERNMENT PROPERTY. British Columbia. Hope
    -Manuscript maps

GOVERNMENT PROPERTY. British Columbia. Victoria
    -Maps

GOVERNMENT RESERVES search under
    GOVERNMENT LAND

HOPE. British Columbia

Government property-Manuscript maps

NIAGARA FALLS REGION. Ontario
Roads. Routes-Prposals-Manuscript maps

ONTARIO
Niagara Falls Region. Roads. Routes-Proposals-Manuscript maps

PROPOSALS
Ontario. Niagara Falls Region. Roads. Routes-Proposals-Manuscript maps

PUBLIC LAND search also under
GOVERNMENT PROPERTY

Figure 6

SUBJECT

ARCHITECTURAL DRAWINGS
British Columbia. Government buildings
[Portfolio of plans of government reserves and buildings in British Columbia, 1861-1871].
31 maps and architectural plans : most ms., most col., most on tracing linen.
Items 1800-1833.
<> 78903/81
*RG 2M 78903/81 D432 F6
*G 3511 .G46 1861 *** (92850226)

BOUNDARIES. Lower Canada
With Upper Canada along the Ottawa River-Manuscript maps
Plan of the River Ottawa from the mouth of the River Mattawan to Point Fortune ... exhibiting the line boundary between Upper and Lower Canada. — Scale [1:31 680]. 40 chs. to 1 in. — 1867.
1 map on 4 sheets : ms., col., on tracing linen.
<>78903/81
*RG 2M 78903/81 D333 F1 #1-4
*G 3512 .F7 1867 *** (92850223)

BOUNDARIES. Upper Canada
With Lower Canada along the Ottawa River-Manuscript maps
Plan of the River Ottawa from the mouth of the River Mattawan to Point Fortune ... exhibiting the line boundary between Upper and Lower Canada. — Scale [1:31 680]. 40 chs. to 1 in. — 1867.
1 map on 4 sheets : ms., col., on tracing linen.
<>78903/81
*RG 2M 78903/81 D333 F1 #1-4
*G 3512 .F7 1867 *** (92850223)

BRITISH COLUMBIA
Government buildings-Architectural drawings
[Portfolio of plans of government reserves and buildings in British Columbia, 1861-1871].
31 maps and architectural plans : most ms., most col., most on tracing linen.
Items 1800-1833.
<>78903/81
*RG 2M 78903/81 D432 F6
*G 3511 .G46 1861 *** (92850226)

Government land-Manuscript maps
[Portfolio of plans of government reserves and buildings in British Columbia, 1861-1871].
31 maps and architectural plans : most ms., most col., most on tracing linen.
Items 1800-1833.
<>78903/81
*RG 2M 78903/81 D432 F6
*G 3511 .G46 1861 *** (92850226)

Hope. Government property-Manuscript maps
Plan no. 17: Town of Hope on Fraser River showing government reserves and buildings in red. -- Scale [1:380 160]. 6 in. to 1 mile. -- 1871.
1 map : ms., col., on tracing linen.
<>78903/81
*RG 2M 78903/81 D432 F6 #1817
*G 3511 .H66 1871 *** (928502228)

Vancouver Island. Railway services: Esquimalt and Nanaimo Railway. Routes -Manuscript maps
Esquimalt and Nanaimo Railway, B.C. 1884 : plan of location from Nanaimo southward, station 0 to station 1056, mil20es [i.e. 20 miles]. -- Scale [1:1 056 000]. 200 ft. to 1 in. -- 1884.
<>78903/81
*RG 2M 78903/81 D333 F4 #10
*G 3512 .V3P3 1884 *** (92850224)

ESQUIMALT AND NANAIMO RAILWAY
Routes-Manuscript maps
Esquimalt and Nanaimo Railway, B.C. 1884 : plan of location from Nanaimo southward, station 0 to station 1056, mil20es [i.e. 20 miles]. -- Scale [1:1 056 000]. 200 ft. to 1 in. -- 1884.
1 map : ms., col., on tracing linen.
<>78903/81
*RG 2M 78903/81 D333 F4 #10
*G 3512 .V3P3 1884 *** (92850224)

GOVERNMENT BUILDINGS. British Columbia
-Architectural drawings
[Portfolio of plans of government reserves and buildings in British Columbia, 1861-1871].
31 maps and architectural plans : most ms., most col., most on tracing linen.
Items 1800-1833.
<>78903/81
*RG 2M 78903/81 D432 F6
*G 3511 .G46 1861 *** (92850226)